

State of West Virginia
Department of Environmental Protection - Office of Oil and Gas
Well Operator's Report of Well Work

API 47-095 - ~~02385~~ ⁰²³⁸⁵ County Tyler District Meade
Quad Pennsboro 7.5' Pad Name Ritchie Petroleum Pad Field/Pool Name -----
Farm name David M. Hartley Well Number Shepherd Unit 1H
Operator (as registered with the OOG) Antero Resources Corporation
Address 1615 Wynkoop Street City Denver State CO Zip 80202

As Drilled location NAD 83/UTM Attach an as-drilled plat, profile view, and deviation survey
Top hole Northing 4356646m Easting 502129m
Landing Point of Curve Northing 4358096.22m Easting 501788.85m
Bottom Hole Northing 4359814m Easting 501126m

Elevation (ft) 1176' GL Type of Well New Existing Type of Report Interim Final
Permit Type Deviated Horizontal Horizontal 6A Vertical Depth Type Deep Shallow
Type of Operation Convert Deepen Drill Plug Back Redrilling Rework Stimulate
Well Type Brine Disposal CBM Gas Oil Secondary Recovery Solution Mining Storage Other _____
Type of Completion Single Multiple Fluids Produced Brine Gas NGL Oil Other _____
Drilled with Cable Rotary

Drilling Media Surface hole Air Mud Fresh Water Intermediate hole Air Mud Fresh Water Brine
Production hole Air Mud Fresh Water Brine
Mud Type(s) and Additive(s)
Air - Foam & 4% KCL
Mud - Polymer

Date permit issued 12/20/2016 Date drilling commenced 3/4/2017 Date drilling ceased 9/6/2017
Date completion activities began 4/12/2018 Date completion activities ceased 8/11/2018
Verbal plugging (Y/N) N/A Date permission granted N/A Granted by N/A

Please note: Operator is required to submit a plugging application within 5 days of verbal permission to plug

Freshwater depth(s) ft N/A Open mine(s) (Y/N) depths _____
Salt water depth(s) ft N/A Void(s) encountered (Y/N) depths _____
Coal depth(s) ft None Identified Cavern(s) encountered (Y/N) depths _____
Is coal being mined in area (Y/N) No

RECEIVED
Office of Oil and Gas
MAR 28 2019
No
WV Department of
Environmental Protection
No

Reviewed by:
JCB
4/23/2019

Reviewed

WR-35
Rev. 8/23/13

API 47-095 - 02375 Farm name David M. Hartley Well number Shepherd Unit 1H

CASING STRINGS	Hole Size	Casing Size	Depth	New or Used	Grade wt/ft	Basket Depth(s)	Did cement circulate (Y/ N) * Provide details below*
Conductor	24"	20"	95'	New	94#, H-40	N/A	Y
Surface	17-1/2"	13-3/8"	397'	New	48#, J-55	N/A	Y
Coal							
Intermediate 1	12-1/4"	9-5/8"	2479'	New	36#, J-55	N/A	Y
Intermediate 2							
Intermediate 3							
Production	8-3/4"/8-1/2"	5-1/2"	17662'	New	23#, P-110	N/A	Y
Tubing		2-3/8"	6739'		4.7#, N-80		
Packer type and depth set		N/A					

Comment Details _____

CEMENT DATA	Class/Type of Cement	Number of Sacks	Slurry wt (ppg)	Yield (ft ³ /sks)	Volume (ft ³)	Cement Top (MD)	WOC (hrs)
Conductor	Class A	202 sx	15.6	1.21	224	0'	8 Hrs.
Surface	Class A	365 sx	15.6	1.21	442	0'	8 Hrs.
Coal							
Intermediate 1	Class A	921 sx	15.6	1.19	1096	0'	8 Hrs.
Intermediate 2							
Intermediate 3							
Production	Class H	800 sx (Lead) 1633 sx (Tail)	13.5 (Lead), 15.2 (Tail)	1.39 (Lead), 1.60 (Tail)	3725	-500' into Intermediate Casing	8 Hrs.
Tubing							

Drillers TD (ft) 17661' MD, 6433' TVD (BHL), 6474' (Deepest Point Drilled) Loggers TD (ft) 17661' MD

Deepest formation penetrated Marcellus Plug back to (ft) N/A

Plug back procedure N/A

Kick off depth (ft) 5821'

Check all wireline logs run caliper density deviated/directional induction
 neutron resistivity gamma ray temperature sonic

Well cored Yes No Conventional Sidewall Were cuttings collected Yes No

DESCRIBE THE CENTRALIZER PLACEMENT USED FOR EACH CASING STRING _____

Conductor - 0

Surface - 1 above guide shoe, 1 above insert float, 1 every 4th joint to surface

Intermediate - 1 above float joint, 1 above float collar, 1 every 4th joint to surface

Production - 1 above float joint, 1 below float collar, 1 every 3rd joint to top of cement

WAS WELL COMPLETED AS SHOT HOLE Yes No DETAILS _____

WAS WELL COMPLETED OPEN HOLE? Yes No DETAILS _____

WERE TRACERS USED Yes No TYPE OF TRACER(S) USED N/A

API 47- 095 - 02375 Farm name David M. Hartley Well number Shepherd Unit 1H

PERFORATION RECORD

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)
*PLEASE SEE ATTACHED EXHIBIT 1					

Please insert additional pages as applicable.

STIMULATION INFORMATION PER STAGE

Complete a separate record for each stimulation stage.

Stage No.	Stimulations Date	Ave Pump Rate (BPM)	Ave Treatment Pressure (PSI)	Max Breakdown Pressure (PSI)	ISIP (PSI)	Amount of Proppant (lbs)	Amount of Water (bbls)	Amount of Nitrogen/other (units)
*PLEASE SEE ATTACHED EXHIBIT 2								

Please insert additional pages as applicable.

WR-35
Rev. 8/23/13

API 47- 095 - 02375 Farm name David M. Hartley Well number Shepherd Unit 1H

PRODUCING FORMATION(S)	DEPTHS	
Marcellus	6391' (TOP) TVD	6761' (TOP) MD

Please insert additional pages as applicable.

GAS TEST Build up Drawdown Open Flow OIL TEST Flow Pump

SHUT-IN PRESSURE Surface 2800 psi Bottom Hole --- psi DURATION OF TEST --- hrs

OPEN FLOW Gas 6484 mcfpd Oil 92 bpd NGL --- bpd Water 930 bpd GAS MEASURED BY Estimated Orifice Pilot

LITHOLOGY/ FORMATION	TOP	BOTTOM	TOP	BOTTOM	DESCRIBE ROCK TYPE AND RECORD QUANTITY AND TYPE OF FLUID (FRESHWATER, BRINE, OIL, GAS, H ₂ S, ETC)
	DEPTH IN FT NAME TVD	DEPTH IN FT TVD	DEPTH IN FT MD	DEPTH IN FT MD	

***PLEASE SEE ATTACHED EXHIBIT 3**

Please insert additional pages as applicable.

Drilling Contractor Frontier Drilling LLC
Address 562 Spring Run Road City Pennsboro State WV Zip 26415

Logging Company Allied Horizontal Wireline Services
Address 381 Colonial Run Road City North Huntington State PA Zip 15642

Cementing Company BJ Services
Address 1036 East Main Street City Bridgeport State WV Zip 26330

Stimulating Company Halliburton
Address 121 Champion Way, Suite 200 City Canonsburg State PA Zip 15317

Please insert additional pages as applicable.

Completed by Megan Griffith Telephone 303-357-7223
Signature _____ Title Permitting Agent Date _____

API 47-095-02385 Farm Name David M. Hartley Well Number Shepherd Unit 1H					
EXHIBIT 1					
Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formations
1	4/12/2018	17472	17564	60	Marcellus
2	4/13/2018	17271	17440	60	Marcellus
3	4/13/2018	17070	17239	60	Marcellus
4	4/14/2018	16869	17038	60	Marcellus
5	4/14/2018	16668	16837	60	Marcellus
6	4/14/2018	16467	16636	60	Marcellus
7	4/15/2018	16266	16435	60	Marcellus
8	4/15/2018	16064	16234	60	Marcellus
9	4/15/2018	15863	16033	60	Marcellus
10	4/16/2018	15662	15832	60	Marcellus
11	4/16/2018	15461	15631	60	Marcellus
12	4/16/2018	15260	15430	60	Marcellus
13	4/17/2018	15059	15229	60	Marcellus
14	4/17/2018	14858	15028	60	Marcellus
15	4/17/2018	14657	14827	60	Marcellus
16	4/18/2018	14456	14625	60	Marcellus
17	4/18/2018	14255	14424	60	Marcellus
18	4/18/2018	14054	14223	60	Marcellus
19	4/19/2018	13853	14022	60	Marcellus
20	4/19/2018	13652	13821	60	Marcellus
21	4/20/2018	13451	13620	60	Marcellus
22	4/20/2018	13249	13419	60	Marcellus
23	4/20/2018	13048	13218	60	Marcellus
24	4/21/2018	12847	13017	60	Marcellus
25	4/21/2018	12646	12816	60	Marcellus
26	4/21/2018	12445	12615	60	Marcellus
27	4/22/2018	12244	12414	60	Marcellus
28	4/22/2018	12043	12213	60	Marcellus
29	4/22/2018	11842	12012	60	Marcellus
30	4/23/2018	11641	11810	60	Marcellus
31	4/23/2018	11440	11609	60	Marcellus
32	4/23/2018	11239	11408	60	Marcellus
33	4/24/2018	11038	11207	60	Marcellus
34	4/24/2018	10837	11006	60	Marcellus
35	4/24/2018	10636	10805	60	Marcellus
36	4/25/2018	10434	10604	60	Marcellus
37	4/25/2018	10233	10403	60	Marcellus
38	4/25/2018	10032	10202	60	Marcellus
39	4/26/2018	9831	10001	60	Marcellus
40	4/26/2018	9630	9800	60	Marcellus
41	4/26/2018	9429	9599	60	Marcellus
42	4/27/2018	9228	9398	60	Marcellus
43	4/28/2018	9027	9197	60	Marcellus
44	4/28/2018	8826	8995	60	Marcellus
45	4/28/2018	8625	8794	60	Marcellus
46	4/28/2018	8424	8593	60	Marcellus
47	4/28/2018	8223	8392	60	Marcellus
48	4/29/2018	8022	8191	60	Marcellus
49	4/29/2018	7821	7990	60	Marcellus
50	4/29/2018	7619	7789	60	Marcellus
51	4/30/2018	7418	7588	60	Marcellus
52	4/30/2018	7217	7387	60	Marcellus
53	4/30/2018	7016	7186	60	Marcellus
54	4/30/2018	6815	6985	60	Marcellus

API 47-095-02385 Farm Name David M. Hartley Well Number Shepherd Unit 1H								
EXHIBIT 2								
Stage No.	Stimulations Date	Avg Pump Rate	Avg Treatment Pressure (PSI)	Max Breakdown Pressure (PSI)	(SIP (PSI))	Amount of Proppant (lbs)	Amount of Water (bbls)	Amount of Nitrogen/ other (units)
1	4/12/2018	63.5	7594	5894	3308	201550	9377	N/A
2	4/13/2018	75.4	7355	5643	4168	417420	9861	N/A
3	4/13/2018	72.9	7409	5411	5126	419920	9532	N/A
4	4/14/2018	73.5	7514	5201	4794	402660	9599	N/A
5	4/14/2018	73.4	7314	5325	4455	420310	9474	N/A
6	4/14/2018	74.6	7423	5315	4481	422080	9562	N/A
7	4/15/2018	73.6	7537	5154	4197	419550	9535	N/A
8	4/15/2018	73.8	7386	5233	3684	420230	9655	N/A
9	4/15/2018	74	7348	4915	3702	422480	9371	N/A
10	4/16/2018	75.1	5996	5996	3588	420940	9735	N/A
11	4/16/2018	71	7882	5963	3758	399560	8747	N/A
12	4/16/2018	72.6	7245	5603	3883	417280	9388	N/A
13	4/17/2018	73.8	7132	5304	3643	412525	9703	N/A
14	4/17/2018	73.2	7064	5560	3627	407465	9413	N/A
15	4/17/2018	77.1	7338	5679	3658	421810	9658	N/A
16	4/18/2018	76	7233	5146	4040	424570	9236	N/A
17	4/18/2018	74.6	7420	5339	4787	422420	9388	N/A
18	4/18/2018	72.6	7424	4352	3840	419350	10493	N/A
19	4/19/2018	72.8	7789	4895	5505	421330	9630	N/A
20	4/19/2018	72.7	7519	5208	5036	420720	9214	N/A
21	4/20/2018	71.6	7360	5426	4560	421750	11439	N/A
22	4/20/2018	68.4	7995	5092	5542	427370	11041	N/A
23	4/20/2018	72.8	7471	4704	5616	419490	10938	N/A
24	4/21/2018	74.9	6693	5302	3933	418810	9657	N/A
25	4/21/2018	76.4	7030	5222	4690	423030	11344	N/A
26	4/21/2018	76.3	7124	6186	4307	420890	9294	N/A
27	4/22/2018	76.8	7211	5672	3785	415820	9233	N/A
28	4/22/2018	76.5	7225	5654	3864	419460	9133	N/A
29	4/22/2018	71.6	7290	5114	3722	406040	8970	N/A
30	4/23/2018	76.2	7303	6019	3995	422010	9174	N/A
31	4/23/2018	73.8	7177	5537	3751	413510	10265	N/A
32	4/23/2018	43.4	8107	6882	6128	19970	9243	N/A
33	4/24/2018	78	7094	5922	3765	418950	10329	N/A
34	4/24/2018	75.5	7105	5862	3641	424610	9251	N/A
35	4/24/2018	75.3	6925	5016	3718	425440	8899	N/A
36	4/25/2018	74.9	7186	4822	3894	416080	10519	N/A
37	4/25/2018	78.9	7191	5736	3774	419120	9205	N/A
38	4/25/2018	77.4	7065	5743	3809	413420	9229	N/A
39	4/26/2018	78.3	6913	5454	3623	423960	11069	N/A
40	4/26/2018	77.8	6270	5270	3496	436050	9547	N/A
41	4/26/2018	72.2	7018	5804	3757	419420	8950	N/A
42	4/27/2018	76	6779	6259	4701	418750	8309	N/A
43	4/28/2018	77.8	6699	4875	5041	424420	8662	N/A
44	4/28/2018	78.3	6682	4932	5486	428610	10611	N/A
45	4/28/2018	78	6904	6455	4888	415690	10071	N/A
46	4/28/2018	77.5	6910	5560	4846	420450	8827	N/A
47	4/28/2018	77.6	6785	5370	5601	403090	8431	N/A
48	4/29/2018	79.4	7126	5249	4959	421680	8738	N/A
49	4/29/2018	80	7045	5806	4984	424700	9299	N/A
50	4/29/2018	78.3	6874	4898	3802	428300	9169	N/A
51	4/30/2018	78.9	6618	5249	3857	418370	8832	N/A
52	4/30/2018	75.3	6946	5776	3561	423870	9817	N/A
53	4/30/2018	78.5	6298	5345	3356	414370	9176	N/A
54	4/30/2018	78.5	6297	5783	3831	419030	8799	N/A
	AVG=	73.9	7,210	5,471	4,252	18,667,290	443,780	TOTAL

API 47-095-02385 Farm Name David M. Hartley Well Number Shepherd Unit 1H				
EXHIBIT 3				
LITHOLOGY/ FORMATION	TOP DEPTH (TVD)	BOTTOM DEPTH (TVD)	TOP DEPTH (MD)	BOTTOM DEPTH (MD)
	From Surface	From Surface	From Surface	From Surface
Shale w/intbd Sandstone and	-32	228	-32	228
Sandy shale and coal	228	528	228	528
Sandy shale	528	708	528	708
Calcareous shale	708	848	708	848
Limy shale with coal	848	1,048	848	1,048
Sandy shale	1,048	1,208	1,048	1,208
Sandy shale with coal	1,208	1,348	1,208	1,348
sandstone	1,348	1,488	1,348	1,488
Sandy shale	1,488	1,568	1,488	1,568
Shaly sandstone	1,568	1,648	1,568	1,648
Silty shale	1,648	1,708	1,648	1,708
Sandy shale	1,708	1,808	1,708	1,808
Sandy shale/coal	1,808	2,035	1,808	2,049
Big Lime	2,067	2,176	2,081	2,193
Big Injun	2,176	2,583	2,193	2,609
Gantz Sand	2,583	2,935	2,609	2,966
Fifty Foot Sandstone	2,935	3,050	2,966	3,083
Gordon	3,050	3,317	3,083	3,356
Fifth Sandstone	3,317	3,449	3,356	3,490
Bayard	3,449	3,676	3,490	3,722
Warren	3,676	4,013	3,722	4,065
Speechley	4,013	4,489	4,065	4,548
Balltown	4,312	4,860	4,369	4,925
Bradford	4,489	4,860	4,548	4,925
Benson	4,860	5,289	4,925	5,363
Alexander	5,289	5,845	5,363	5,929
Rhinestreet	5,813	6,166	5,897	6,306
Sycamore	6,166	6,266	6,306	6,452
Middlesex	6,266	6,363	6,452	6,657
Burkett	6,363	6,384	6,657	6,730
Tully	6,384	6,391	6,730	6,761
Marcellus	6,391	N/A	6,761	NA

*Please note Antero determines formation tops based on mud logs that are only run on one well on a multi-well pad. The measured depth (MD) data on subsequent wells may be slightly different due to the well's unique departure.



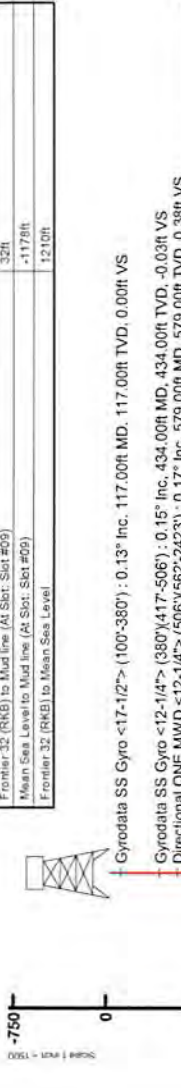
ANTERO RESOURCES CORPORATION



Location: Tyler County, WV
 Field: Tyler
 Facility: Ritchie Petroleum Pad
 Slot: Slot #09
 Well: Shepherd Unit 1H
 Wellbore: Shepherd Unit 1H PWB

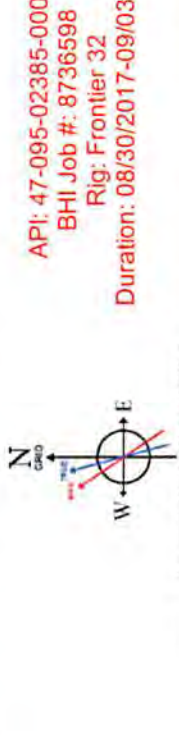
Post reference wellpath as Shepherd Unit 1H PWB Rev-A.0	Grid System: NAD27 UTM Zone 17 North, US feet
True vertical depths are referenced to Frontier 32 (RKB)	* = Wellpath was transformed from a different geocoid datum
Measured depths are referenced to Frontier 32 (RKB)	North Reference: Grid north
Frontier 32 (RKB) to Mean Sea Level: 1210 feet	Scale: True distance
Mean Sea Level to Mud line (At Slot #09): -1178 feet	Directions are in feet
Coordinates are in feet referenced to Slot	Created by: dslanest/2017-10-06
	Database: WA_MES_ExternalUS_bath

Location Information			
Facility Name	Grid East (US ft)	Grid North (US ft)	Longitude
Ritchie Petroleum Pad	1647374.770	14292738.540	80°58'31.350"W
Slot	Local E (ft)	Local N (ft)	Latitude
Slot #09	-23.27	-19.63	39°21'33.060"N
Comment	Shepherd Unit 1H		80°58'31.630"W
Frontier 32 (RKB) to Mud line (At Slot: Slot #09)		32ft	
Mean Sea Level to Mud line (At Slot: Slot #09)		+1178ft	
Frontier 32 (RKB) to Mean Sea Level		1210ft	

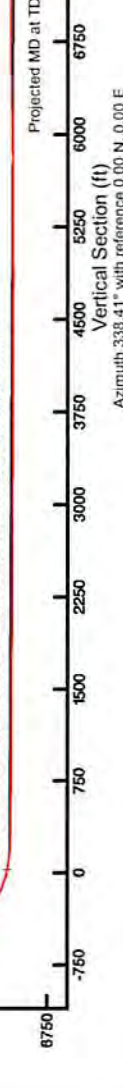


Well Profile Data						
Design Comment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local E (ft)	Local N (ft)
Tie On	6395.00	45.810	348.000	6239.48	-10.19	846.29
Proj To Bottom	6481.00	51.200	346.000	6296.44	52.53	831.75
POE	6726.29	74.500	332.610	6409.00	253.71	752.89
Landing Pt	6959.90	89.700	332.610	6440.00	459.47	646.79
On Azimuth	7152.97	89.700	339.405	6441.01	634.18	566.74
BHL	17870.39	89.700	338.405	6466.03	10413.23	-3304.08
						0.00
						10898.42

Well Data			
Slot	Well	Wellbore	Wellpath
Slot #09	Shepherd Unit 1H	Shepherd Unit 1H AWP	Shepherd Unit 1H AWP Rev-A.0
Slot #09	Shepherd Unit 1H	Shepherd Unit 1H PWB	Shepherd Unit 1H PWB Rev-A.0



User specified Dip: 68.60° Field: 61919.0T
 Magnetic North is 7.60 degrees West of True North (at 25/Aug/2017)
 Grid North is 0.02 degrees East of True North
 To correct azimuth from True to Grid subtract 0.02 degrees
 To correct azimuth from Magnetic to Grid subtract 7.62 degrees



Vertical Section (ft)
 Azimuth 338.41° with reference 0.00 N, 0.00 E
 Scale 1 inch = 1500



Actual Wellpath Report

Shepherd Unit 1H AWP Proj: 17661'

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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #09
Area	Tyler County, WV	Well	Shepherd Unit 1H
Field	Tyler	Wellbore	Shepherd Unit 1H AWB
Facility	Ritchie Petroleum Pad		

REPORT SETUP INFORMATION	
Projection System	NAD27 / UTM Zone 17 North, US feet
North Reference	Grid
Scale	0.999600
Convergence at slot	0.02° East
Software System	WellArchitect® 5.0
User	Delaset
Report Generated	06/Oct/2017 at 11:05
Database/Source file	WA_MPL_EasternUS_Defn/Shepherd_Unit_1H_AWP_Proj_17661_.xml

WELLPATH LOCATION						
	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	-23.27	-19.63	1647355.15	14292715.28	39°21'33.060"N	80°58'31.630"W
Facility Reference Pt			1647374.77	14292738.54	39°21'33.290"N	80°58'31.380"W
Field Reference Pt			0.00	0.00	0°00'00.000"	85°29'19.301"W

WELLPATH DATUM	
Calculation method	Minimum curvature
Horizontal Reference Pt	Slot
Vertical Reference Pt	Frontier 32 (RKB)
MD Reference Pt	Frontier 32 (RKB)
Field Vertical Reference	Mean Sea Level
	Frontier 32 (RKB) to Facility Vertical Datum
	Frontier 32 (RKB) to Mean Sea Level
	Frontier 32 (RKB) to Mud Line at Slot (Slot #09)
	Section Origin
	Section Azimuth
	32.00ft
	1210.00ft
	32.00ft
	N 0.00, E 0.00 ft
	338.41°

05/31/2019



Actual Wellpath Report

Shepherd Unit 1H AWP Proj: 17661'

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REFERENCE WELLPATH IDENTIFICATION		Slot #09
Operator	ANTERO RESOURCES CORPORATION	Shepherd Unit 1H
Area	Tyler County, WV	Well
Field	Tyler	Wellbore
Facility	Richie Petroleum Pad	Shepherd Unit 1H AWB

WELLPATH DATA (214 stations) * = interpolated/extrapolated station																
MD (ft)	Inclination (°)	Azimuth (°)	TVD (ft)	Vert Sect (ft)	North (ft)	East (ft)	Grid East (ft)	Grid North (ft)	Latitude	Longitude	Closure Dist (ft)	Closure Dir (°)	DLS (F/100ft)	Build Rate (F/100ft)	Turn Rate (F/100ft)	Comments
0.00	0.000	66.800	0.00	0.00	0.00	0.00	1647355.15	14292715.28	39°21'33.060"N	80°58'31.630"W	0.00	0.000	0.00	0.00	0.00	
32.00	0.000	66.800	32.00	0.00	0.00	0.00	1647355.15	14292715.28	39°21'33.060"N	80°58'31.630"W	0.00	0.000	0.00	0.00	0.00	
117.00	0.130	66.800	117.00	0.00	0.04	0.09	1647355.24	14292715.32	39°21'33.060"N	80°58'31.629"W	0.10	66.800	0.15	0.15	78.59	Gyrodata SS Gyro <17-1/2"> (100'-380')
217.00	0.180	81.220	217.00	-0.03	0.11	0.35	1647355.50	14292715.38	39°21'33.061"N	80°58'31.626"W	0.36	72.967	0.06	0.05	14.42	
317.00	0.250	67.170	317.00	-0.06	0.22	0.70	1647355.65	14292715.49	39°21'33.062"N	80°58'31.621"W	0.74	73.007	0.09	0.07	-14.05	
397.00	0.440	70.770	397.00	-0.07	0.38	1.16	1647356.30	14292715.66	39°21'33.064"N	80°58'31.615"W	1.22	71.607	0.24	0.24	4.50	
434.00	0.150	339.080	434.00	-0.03	0.48	1.27	1647356.42	14292715.75	39°21'33.065"N	80°58'31.614"W	1.36	69.478	1.27	-0.78	-247.81	Gyrodata SS Gyro <12-1/4"> (380')(417'-506')
523.00	0.270	298.240	523.00	0.25	0.68	1.05	1647356.19	14292715.96	39°21'33.067"N	80°58'31.617"W	1.25	56.806	0.21	0.13	-45.89	
579.00	0.170	268.960	579.00	0.38	0.75	0.85	1647355.99	14292716.02	39°21'33.067"N	80°58'31.619"W	1.13	48.645	0.26	-0.18	-52.29	Directional ONE MWD <12-1/4"> (506')(562'-2423')
669.00	0.170	148.240	669.00	0.30	0.63	0.78	1647355.93	14292715.91	39°21'33.066"N	80°58'31.620"W	1.00	51.227	0.33	0.00	-134.13	
759.00	0.450	150.980	759.00	-0.19	0.21	1.03	1647356.17	14292715.48	39°21'33.062"N	80°58'31.617"W	1.05	78.602	0.31	0.31	3.04	
849.00	0.840	123.940	848.99	-1.14	-0.51	1.81	1647356.96	14292714.76	39°21'33.055"N	80°58'31.607"W	1.88	105.879	0.64	0.54	-30.04	
940.00	2.450	113.020	939.95	-3.13	-1.69	4.22	1647359.36	14292713.59	39°21'33.043"N	80°58'31.576"W	4.55	111.855	1.69	1.66	-12.00	
1028.00	3.950	106.360	1027.81	-6.31	-3.28	8.86	1647364.00	14292712.00	39°21'33.028"N	80°58'31.517"W	9.45	110.326	1.75	1.70	-7.57	
1116.00	5.490	100.730	1115.51	-10.43	-4.92	15.90	1647371.04	14292710.36	39°21'33.011"N	80°58'31.428"W	16.65	107.188	1.83	1.75	-6.40	
1204.00	6.420	97.490	1203.03	-15.07	-6.94	24.92	1647380.05	14292708.94	39°21'32.997"N	80°58'31.313"W	25.71	104.285	1.12	1.06	-3.68	
1293.00	7.640	99.140	1291.36	-20.51	-7.93	35.69	1647390.82	14292707.35	39°21'32.982"N	80°58'31.176"W	36.56	102.530	1.39	1.37	1.85	
1381.00	8.900	100.020	1378.44	-27.07	-10.05	48.17	1647403.30	14292705.24	39°21'32.961"N	80°58'31.017"W	49.21	101.780	1.44	1.43	1.00	
1469.00	10.390	103.420	1465.20	-35.19	-13.07	62.59	1647417.72	14292702.21	39°21'32.931"N	80°58'30.833"W	63.94	101.796	1.81	1.69	3.86	
1557.00	11.280	108.770	1551.63	-45.31	-17.68	78.46	1647433.56	14292697.60	39°21'32.885"N	80°58'30.631"W	80.43	102.701	1.53	1.01	6.08	
1645.00	11.640	108.720	1637.87	-56.63	-23.30	95.02	1647450.13	14292691.98	39°21'32.829"N	80°58'30.420"W	97.83	103.779	0.41	0.41	-0.06	
1734.00	10.690	105.400	1725.19	-67.41	-28.38	111.48	1647466.58	14292686.91	39°21'32.779"N	80°58'30.211"W	115.04	104.281	1.29	-1.07	-3.73	
1822.00	10.590	103.310	1811.68	-76.94	-32.41	127.22	1647482.32	14292682.89	39°21'32.739"N	80°58'30.010"W	131.28	104.290	0.45	-0.11	-2.38	
1910.00	10.000	107.920	1898.26	-86.43	-36.62	142.36	1647497.45	14292678.67	39°21'32.698"N	80°58'29.816"W	146.99	104.425	1.15	-0.67	5.24	
1998.00	9.420	106.310	1985.00	-95.72	-40.99	156.54	1647511.62	14292674.30	39°21'32.654"N	80°58'29.637"W	161.82	104.674	0.73	-0.66	-1.83	
2087.00	11.470	109.510	2072.52	-106.01	-45.99	171.87	1647526.95	14292669.30	39°21'32.605"N	80°58'29.442"W	177.92	104.991	2.39	2.30	3.60	
2175.00	13.490	111.760	2158.44	-118.81	-52.72	189.66	1647544.73	14292662.58	39°21'32.538"N	80°58'29.216"W	196.85	105.535	2.36	2.30	2.56	
2263.00	13.910	110.450	2243.94	-132.94	-60.22	209.10	1647564.16	14292655.08	39°21'32.464"N	80°58'28.968"W	217.60	106.067	0.59	0.48	-1.49	
2352.00	13.340	107.830	2330.43	-146.62	-67.10	228.90	1647583.95	14292648.20	39°21'32.396"N	80°58'28.716"W	238.53	106.339	0.94	-0.64	-2.94	
2440.00	11.070	104.330	2418.44	-158.02	-72.30	246.75	1647601.80	14292643.00	39°21'32.345"N	80°58'28.489"W	257.12	106.332	2.71	-2.58	-3.98	



Actual Wellpath Report

Shepherd Unit 1H AWP Proj: 176661'
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REFERENCE WELLPATH IDENTIFICATION		Slot #09
Operator	ANTERO RESOURCES CORPORATION	Shepherd Unit 1H
Area	Tyler County, WV	Shepherd Unit 1H AWB
Field	Tyler	
Facility	Richie Petroleum Pad	

WELLPATH DATA (214 stations)																
MD (ft)	Inclination (°)	Azimuth (°)	TVD (ft)	VertSect (ft)	North (ft)	East (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude	Closure Dist (ft)	Turn Rate (°/100ft)				
2505.00	10.780	102.780	2480.26	-165.12	-75.19	258.73	1647613.77	14292640.11	39°21'32.316"N	80°58'28.336"W	269.43	106.205	0.62	-0.43	-2.38	Directional ONE MWD <8-3/4"> (2423')(2488'-6378')
2553.00	10.100	100.150	2527.46	-169.87	-76.93	267.25	1647622.29	14292638.38	39°21'32.299"N	80°58'28.228"W	278.11	106.058	1.75	-1.44	-5.48	
2641.00	10.410	94.290	2614.06	-177.40	-78.88	282.78	1647637.81	14292636.43	39°21'32.280"N	80°58'28.030"W	293.57	105.587	1.24	0.35	-6.66	
2729.00	8.820	102.340	2700.82	-184.64	-80.92	297.30	1647652.33	14292634.39	39°21'32.259"N	80°58'27.845"W	308.11	105.226	2.36	-1.81	9.15	
2818.00	9.270	112.920	2788.72	-193.47	-85.17	310.57	1647665.59	14292630.14	39°21'32.217"N	80°58'27.676"W	322.03	105.336	1.93	0.51	11.89	
2906.00	9.480	118.440	2875.55	-204.00	-91.38	323.47	1647678.49	14292623.93	39°21'32.156"N	80°58'27.512"W	336.13	105.775	1.05	0.24	6.27	
2997.00	9.430	117.900	2965.31	-215.41	-98.44	336.65	1647691.66	14292616.88	39°21'32.086"N	80°58'27.344"W	350.74	106.300	0.11	-0.05	-0.59	
3085.00	10.820	116.610	3051.94	-227.05	-105.51	350.40	1647705.41	14292609.81	39°21'32.016"N	80°58'27.169"W	365.94	106.758	1.60	1.58	-1.47	
3173.00	11.980	115.780	3138.20	-239.92	-113.19	366.01	1647721.01	14292602.14	39°21'31.940"N	80°58'26.971"W	383.11	107.184	1.33	1.32	-0.94	
3261.00	12.630	111.690	3224.18	-253.24	-120.71	383.18	1647738.17	14292594.61	39°21'31.866"N	80°58'26.752"W	401.74	107.486	1.24	0.74	-4.65	
3349.00	11.530	107.950	3310.24	-265.43	-126.98	400.48	1647755.47	14292588.35	39°21'31.804"N	80°58'26.532"W	420.13	107.592	1.53	-1.25	-4.25	
3438.00	10.570	105.470	3397.58	-276.02	-131.90	416.81	1647771.79	14292583.43	39°21'31.755"N	80°58'26.324"W	437.18	107.560	1.20	-1.08	-2.79	
3526.00	9.720	102.360	3484.21	-285.03	-135.64	431.85	1647786.82	14292579.69	39°21'31.718"N	80°58'26.133"W	452.65	107.437	1.15	-0.97	-3.53	
3614.00	11.340	104.750	3570.72	-294.31	-139.43	447.47	1647802.44	14292575.90	39°21'31.681"N	80°58'25.934"W	468.69	107.307	1.91	1.84	2.72	
3703.00	10.640	99.170	3658.06	-303.77	-143.00	464.20	1647819.15	14292572.34	39°21'31.645"N	80°58'25.721"W	485.72	107.121	1.33	-0.56	-6.27	
3791.00	9.790	93.980	3744.64	-311.23	-144.83	479.83	1647834.79	14292570.50	39°21'31.627"N	80°58'25.522"W	501.21	106.796	1.59	-1.19	-5.90	
3879.00	10.860	99.890	3831.22	-318.79	-146.78	495.46	1647850.41	14292568.56	39°21'31.608"N	80°58'25.323"W	516.75	106.502	1.71	1.22	6.72	
3968.00	11.500	100.490	3918.55	-327.82	-149.81	512.34	1647867.28	14292565.52	39°21'31.578"N	80°58'25.108"W	533.80	106.299	0.58	0.56	0.67	
4056.00	11.500	104.130	4004.81	-337.55	-153.53	529.37	1647884.30	14292561.81	39°21'31.541"N	80°58'24.891"W	551.19	106.174	0.83	0.16	4.14	
4144.00	11.290	104.630	4091.07	-347.76	-157.85	546.21	1647901.14	14292557.49	39°21'31.498"N	80°58'24.677"W	568.56	106.119	0.26	-0.24	0.57	
4232.00	10.440	117.650	4177.51	-358.89	-163.73	561.61	1647916.53	14292551.62	39°21'31.440"N	80°58'24.481"W	584.99	106.253	2.94	-0.97	14.80	
4321.00	10.010	115.460	4265.09	-370.66	-170.79	575.74	1647930.65	14292544.55	39°21'31.370"N	80°58'24.301"W	600.54	106.523	0.65	-0.48	-2.46	
4409.00	10.620	118.610	4351.67	-382.49	-177.97	589.76	1647944.67	14292537.38	39°21'31.299"N	80°58'24.122"W	616.03	106.792	0.94	0.69	3.58	
4497.00	10.020	115.760	4438.25	-394.35	-185.18	603.78	1647958.68	14292530.18	39°21'31.228"N	80°58'23.944"W	631.53	107.051	0.90	-0.68	-3.24	
4585.00	9.410	112.810	4524.99	-405.01	-191.29	617.30	1647972.20	14292524.06	39°21'31.168"N	80°58'23.772"W	646.26	107.217	0.89	-0.69	-3.35	
4673.00	11.010	117.400	4611.59	-416.39	-197.95	631.40	1647986.29	14292517.41	39°21'31.102"N	80°58'23.592"W	661.70	107.407	2.04	1.82	5.22	
4762.00	10.780	115.620	4698.99	-428.31	-205.46	646.45	1648001.33	14292509.90	39°21'31.028"N	80°58'23.401"W	678.31	107.532	0.46	-0.26	-2.00	
4850.00	10.580	112.810	4785.46	-440.60	-212.15	661.31	1648016.20	14292503.21	39°21'30.961"N	80°58'23.212"W	694.51	107.786	0.63	-0.23	-3.19	
4938.00	9.750	106.970	4872.08	-450.90	-217.46	675.89	1648030.76	14292497.91	39°21'30.909"N	80°58'23.026"W	710.01	107.835	1.50	-0.94	-6.64	
5027.00	8.980	102.580	4959.90	-459.50	-221.17	688.88	1648044.75	14292494.20	39°21'30.872"N	80°58'22.848"W	724.47	107.775	1.17	-0.85	-4.92	



Actual Wellpath Report

Shepherd Unit 1H AWP Proj: 17661'

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REFERENCE WELLPATH IDENTIFICATION		Slot	Slot #09
Operator	ANTERO RESOURCES CORPORATION	Well	Shepherd Unit 1H
Area	Tyler County, WV	Wellbore	Shepherd Unit 1H AWB
Field	Tyler		
Facility	Richie Petroleum Pad		

WELLPATH DATA (214 stations) * = interpolated/extrapolated station																
MD (ft)	Inclination (°)	Azimuth (°)	TVD (ft)	VertSect (ft)	North (ft)	East (ft)	Grid East (ft)	Grid North (ft)	Latitude	Longitude	Closure Dist (ft)	Closure Dir (°)	DLS (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	Comments
5115.00	11.140	108.920	5046.54	-468.89	-225.43	704.64	1648059.50	14292489.94	39°21'30.830"N	80°58'22.660"W	739.82	107.740	2.74	2.44	2.44	
5203.00	11.490	104.360	5132.83	-479.56	-230.36	721.17	1648076.03	14292485.01	39°21'30.781"N	80°58'22.450"W	757.07	107.715	1.09	0.40	0.40	-5.18
5292.00	11.430	98.510	5220.06	-489.19	-233.86	738.48	1648093.33	14292481.51	39°21'30.747"N	80°58'22.229"W	774.62	107.572	1.31	-0.07	-0.07	-6.57
5390.00	11.270	94.180	5306.34	-497.30	-235.78	755.68	1648110.52	14292479.59	39°21'30.728"N	80°58'22.010"W	791.61	107.328	0.99	-0.18	-0.18	-4.92
5488.00	12.050	98.720	5392.53	-505.67	-237.80	773.34	1648128.17	14292477.58	39°21'30.708"N	80°58'21.785"W	809.07	107.092	1.37	0.89	0.89	5.16
5556.00	11.270	109.380	5478.72	-515.95	-242.04	790.53	1648145.36	14292473.33	39°21'30.665"N	80°58'21.567"W	826.75	107.024	2.60	-0.89	-0.89	12.11
5644.00	10.910	121.740	5565.09	-528.27	-249.28	805.73	1648160.55	14292466.10	39°21'30.594"N	80°58'21.373"W	843.41	107.191	2.73	-0.41	-0.41	14.05
5733.00	10.280	112.330	5652.58	-540.53	-256.73	820.24	1648175.05	14292458.65	39°21'30.520"N	80°58'21.188"W	859.47	107.380	2.07	-0.71	-0.71	-10.57
5777.00	9.730	92.220	5695.92	-544.76	-258.36	827.59	1648182.40	14292452.20	39°21'30.504"N	80°58'21.095"W	866.98	107.338	8.00	-1.25	-1.25	-45.70
5821.00	10.750	71.470	5739.23	-546.48	-257.20	835.19	1648190.01	14292458.18	39°21'30.516"N	80°58'20.998"W	873.90	107.117	8.65	2.32	2.32	-47.16
5865.00	12.560	55.360	5782.34	-545.62	-253.18	843.02	1648197.83	14292452.20	39°21'30.555"N	80°58'20.898"W	880.22	106.716	8.42	4.11	4.11	-36.61
5909.00	13.850	38.800	5825.19	-541.93	-246.35	850.26	1648205.07	14292469.02	39°21'30.623"N	80°58'20.806"W	885.23	106.158	9.05	2.93	2.93	-37.64
5953.00	16.620	28.810	5867.54	-535.32	-236.73	856.60	1648211.40	14292478.64	39°21'30.718"N	80°58'20.725"W	888.71	105.449	8.65	6.30	6.30	-22.70
5997.00	19.340	16.710	5909.51	-525.58	-224.23	861.73	1648216.53	14292491.14	39°21'30.841"N	80°58'20.660"W	890.42	104.586	10.47	6.18	6.18	-27.50
6041.00	23.230	9.880	5950.50	-512.46	-208.70	865.31	1648220.11	14292506.66	39°21'30.995"N	80°58'20.614"W	890.12	103.580	10.47	8.84	8.84	-16.52
6086.00	26.190	3.500	5991.39	-495.89	-190.04	867.44	1648222.24	14292525.32	39°21'31.179"N	80°58'20.587"W	888.01	102.357	8.85	6.58	6.58	-14.18
6130.00	28.710	358.820	6030.43	-477.19	-169.77	867.82	1648222.62	14292545.57	39°21'31.380"N	80°58'20.582"W	884.27	101.069	7.54	5.73	5.73	-10.64
6174.00	31.960	356.320	6068.40	-456.19	-147.57	866.85	1648221.65	14292567.77	39°21'31.599"N	80°58'20.595"W	879.32	99.661	7.97	7.43	7.43	-5.68
6218.00	34.780	354.110	6105.14	-433.01	-123.45	864.82	1648219.62	14292591.87	39°21'31.837"N	80°58'20.620"W	873.58	98.124	6.94	6.36	6.36	-5.02
6262.00	37.640	352.170	6140.64	-407.88	-97.66	861.70	1648216.50	14292617.66	39°21'32.082"N	80°58'20.660"W	867.21	96.466	7.00	6.50	6.50	-4.41
6307.00	40.810	350.820	6175.50	-380.16	-69.52	857.48	1648212.28	14292645.79	39°21'32.370"N	80°58'20.714"W	860.29	94.635	7.30	7.04	7.04	-3.00
6351.00	43.380	349.270	6208.14	-351.27	-40.47	852.37	1648207.17	14292674.82	39°21'32.658"N	80°58'20.779"W	853.33	92.718	6.30	5.84	5.84	-3.52
6395.00	45.810	348.000	6239.48	-320.87	-10.19	846.28	1648201.08	14292705.09	39°21'32.957"N	80°58'20.856"W	846.34	90.690	5.88	5.52	5.52	-2.89
6434.00	49.240	345.620	6279.31	-277.83	32.16	836.33	1648191.14	14292747.42	39°21'33.375"N	80°58'20.983"W	835.94	87.798	6.53	5.81	5.81	-4.03
6484.00	51.230	344.380	6298.50	-254.93	54.43	830.35	1648185.17	14292769.68	39°21'33.596"N	80°58'21.068"W	832.14	86.250	7.36	6.63	6.63	-4.13
6487.00	51.430	344.260	6300.38	-252.60	56.69	829.72	1648184.53	14292771.94	39°21'33.618"N	80°58'21.067"W	831.65	86.092	7.36	6.66	6.66	-4.00
6534.00	56.770	342.620	6327.93	-214.69	93.16	818.86	1648173.67	14292808.40	39°21'33.978"N	80°58'21.205"W	824.14	83.510	11.71	11.36	11.36	-3.49
6582.00	61.910	341.500	6352.40	-173.49	132.42	806.13	1648160.96	14292847.85	39°21'34.367"N	80°58'21.367"W	816.94	80.671	10.89	10.71	10.71	-2.33
6629.00	66.180	339.990	6372.96	-131.28	172.31	792.19	1648147.02	14292887.51	39°21'34.761"N	80°58'21.544"W	810.71	77.729	9.53	9.09	9.09	-3.21
6677.00	70.080	338.620	6390.84	-86.75	213.97	775.44	1648131.28	14292929.16	39°21'35.173"N	80°58'21.744"W	805.39	74.593	8.57	8.15	8.15	-2.85



Actual Wellpath Report

Shepherd Unit 1H AWP Proj: 17661'
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REFERENCE WELLPATH IDENTIFICATION		Slot #09
Operator	ANTERO RESOURCES CORPORATION	Shepherd Unit 1H
Area	Tyler County, WV	Shepherd Unit 1H AWB
Field	Tyler	
Facility	Richlie Petroleum Pad	

WELLPATH DATA (214 stations) † = interpolated/extrapolated station																
MD (ft)	Inclination (°)	Azimuth (°)	TVD (ft)	Vert.Sect (ft)	North (ft)	East (ft)	Grid East (ft)	Grid North (ft)	Latitude	Longitude	Closure Dist (ft)	Closure Dir (°)	DLS (ft/100ft)	Build Rate (ft/100ft)	Turn Rate (ft/100ft)	Comments
6689.00	70.935	338.361	6394.84	-75.44	224.49	772.30	1648127.13	14292939.68	39°21'35.27"N	80°58'21.79"W	804.26	73.792	7.33	7.04	-2.16	Burkett: 6669' MD
6724.00	73.400	337.620	6405.56	-42.12	255.38	759.81	1648114.65	14292970.55	39°21'35.58"N	80°58'21.95"W	801.58	71.422	7.33	7.04	-2.12	
6762.00	75.648	335.485	6415.70	-5.52	288.97	745.24	1648100.08	14293004.13	39°21'35.91"N	80°58'22.14"W	799.30	68.806	8.02	5.91	-5.62	Tully: 6762' MD
6772.00	76.240	334.930	6418.13	4.16	297.78	741.17	1648096.02	14293012.93	39°21'36.00"N	80°58'22.193"W	798.75	68.111	8.02	5.94	-5.55	
6793.00	77.365	334.418	6422.92	24.58	316.26	732.42	1648087.28	14293031.41	39°21'36.184"N	80°58'22.304"W	797.78	66.646	5.86	5.36	-2.44	Marcellus POE: 6793' MD
6819.00	78.760	333.790	6428.30	49.93	339.14	721.31	1648076.17	14293054.28	39°21'36.410"N	80°58'22.446"W	797.06	64.819	5.86	5.36	-2.41	
6867.00	80.920	334.040	6436.77	97.03	381.57	700.54	1648055.41	14293096.70	39°21'36.829"N	80°58'22.710"W	797.72	61.424	4.53	4.50	0.52	
6914.00	82.320	336.030	6443.62	143.44	423.72	680.92	1648035.79	14293138.83	39°21'37.246"N	80°58'22.960"W	801.99	58.107	5.14	2.98	4.23	
6962.00	85.320	337.120	6448.78	191.13	467.50	661.95	1648016.83	14293182.59	39°21'37.679"N	80°58'23.201"W	810.39	54.768	6.65	6.25	2.27	
7009.00	86.950	337.150	6451.95	238.01	510.71	643.73	1647998.62	14293225.78	39°21'38.106"N	80°58'23.433"W	821.71	51.573	3.47	3.47	0.06	
7057.00	88.770	337.160	6453.74	285.97	554.91	625.11	1647980.00	14293269.97	39°21'38.543"N	80°58'23.670"W	835.88	48.404	3.79	3.79	0.02	
7152.00	88.950	335.600	6455.63	380.88	641.93	587.05	1647941.96	14293356.95	39°21'39.403"N	80°58'24.154"W	869.89	42.443	1.65	0.19	-1.64	
7247.00	88.890	334.470	6457.42	475.70	728.04	546.96	1647901.89	14293443.03	39°21'40.254"N	80°58'24.664"W	910.61	36.917	1.19	-0.06	-1.19	
7342.00	89.630	334.410	6458.65	570.46	813.74	505.98	1647860.92	14293528.69	39°21'41.101"N	80°58'25.185"W	958.22	31.873	0.78	0.78	-0.06	
7438.00	89.570	337.550	6459.32	666.36	901.41	466.91	1647821.87	14293616.33	39°21'41.968"N	80°58'25.682"W	1015.16	27.383	3.27	-0.06	3.27	
7533.00	89.720	338.610	6459.91	761.36	989.54	431.44	1647786.42	14293704.42	39°21'42.839"N	80°58'26.134"W	1079.51	23.557	1.13	0.16	1.12	
7628.00	89.720	336.690	6460.37	856.34	1077.40	395.32	1647750.31	14293792.24	39°21'43.707"N	80°58'26.593"W	1147.63	20.149	2.02	0.00	-2.02	
7723.00	89.780	337.780	6460.79	951.32	1165.00	358.56	1647713.57	14293879.80	39°21'44.573"N	80°58'27.061"W	1218.93	17.107	1.15	0.06	1.15	
7819.00	89.780	338.470	6461.16	1047.32	1254.08	322.79	1647677.81	14293968.86	39°21'45.454"N	80°58'27.516"W	1294.96	14.434	0.72	0.00	0.72	
7914.00	89.850	337.500	6461.46	1142.32	1342.15	287.18	1647642.22	14294056.89	39°21'46.325"N	80°58'27.969"W	1372.53	12.078	1.02	0.07	-1.02	
8010.00	89.780	337.570	6461.77	1238.30	1430.87	250.50	1647605.55	14294145.57	39°21'47.201"N	80°58'28.436"W	1452.63	9.930	0.10	-0.07	0.07	
8106.00	89.720	337.510	6462.19	1334.29	1519.59	213.83	1647568.89	14294234.25	39°21'48.078"N	80°58'28.902"W	1534.56	8.010	0.09	-0.06	-0.06	
8201.00	89.780	336.610	6462.61	1429.26	1607.07	176.80	1647531.88	14294321.70	39°21'48.943"N	80°58'29.373"W	1616.77	6.278	0.95	0.06	-0.95	
8296.00	89.780	335.470	6462.97	1524.21	1694.22	138.98	1647494.07	14294408.81	39°21'49.805"N	80°58'29.855"W	1699.91	4.690	0.15	0.00	-0.15	
8392.00	89.880	335.770	6463.26	1620.13	1782.00	100.12	1647455.22	14294496.56	39°21'50.672"N	80°58'30.349"W	1784.81	3.216	0.74	0.10	-0.73	
8488.00	89.660	335.510	6463.64	1716.02	1869.45	60.52	1647415.64	14294583.98	39°21'51.537"N	80°58'30.853"W	1870.43	1.854	0.35	-0.23	-0.27	
8583.00	89.750	338.480	6464.13	1810.98	1956.88	23.40	1647378.54	14294671.38	39°21'52.401"N	80°58'31.325"W	1957.02	0.685	3.13	0.09	3.13	
8678.00	89.780	339.140	6464.52	1905.98	2045.46	-10.94	1647344.21	14294759.92	39°21'53.277"N	80°58'31.762"W	2045.49	359.694	0.70	0.03	0.69	
8773.00	89.750	340.200	6464.91	2000.95	2134.54	-43.95	1647311.22	14294848.96	39°21'54.157"N	80°58'32.182"W	2134.99	358.821	1.12	-0.03	1.12	
8868.00	89.910	337.890	6465.19	2095.94	2223.25	-77.92	1647277.26	14294937.83	39°21'55.034"N	80°58'32.614"W	2224.62	357.993	2.44	0.17	-2.43	



Actual Wellpath Report

Shepherd Unit 1H AWP Proj: 17661'
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REFERENCE WELLPATH IDENTIFICATION	
Operator	ANTERO RESOURCES CORPORATION
Area	Tyler County, WV
Field	Tyler
Facility	Richie Petroleum Pad
Slot	Slot #09
Well	Shepherd Unit 1H
Wellbore	Shepherd Unit 1H AWB

WELLPATH DATA (214 stations)																
MD (ft)	Inclination (°)	Azimuth (°)	TVD (ft)	Vert Sect (ft)	North (ft)	East (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude	Closure Dist (ft)	Closure Dir (°)	DLS (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	Comments
8964.00	89.780	340.460	6465.45	2191.92	2312.97	-112.04	1647243.15	14295027.32	39°21'55.921"N	80°58'33.049"W	2315.68	357.227	2.68	-0.14	2.68	
9059.00	89.720	343.740	6465.87	2286.71	2403.36	-141.24	1647213.96	14295117.67	39°21'56.814"N	80°58'33.420"W	2407.51	356.637	3.45	-0.06	3.45	
9154.00	89.750	342.800	6466.31	2381.37	2494.34	-168.59	1647186.63	14295208.61	39°21'57.713"N	80°58'33.788"W	2500.03	356.133	0.99	0.03	-0.99	
9249.00	89.750	341.880	6466.72	2476.14	2584.86	-197.41	1647157.82	14295299.10	39°21'58.608"N	80°58'34.134"W	2592.38	355.633	0.97	0.00	-0.97	
9344.00	89.880	342.030	6467.03	2570.96	2675.18	-226.83	1647128.41	14295389.39	39°21'59.501"N	80°58'34.509"W	2684.78	355.153	0.21	0.14	0.16	
9438.00	89.940	340.430	6467.18	2664.84	2764.18	-257.08	1647098.17	14295478.35	39°22'00.391"N	80°58'34.894"W	2776.11	354.687	1.70	0.06	-1.70	
9534.00	89.750	338.100	6467.44	2760.83	2853.96	-291.06	1647064.20	14295568.09	39°22'01.268"N	80°58'35.326"W	2868.76	354.177	2.44	-0.20	-2.43	
9628.00	89.780	337.520	6467.52	2854.82	2940.99	-326.57	1647028.71	14295655.09	39°22'02.128"N	80°58'35.778"W	2959.07	353.664	0.62	0.03	-0.62	
9723.00	89.780	337.710	6468.19	2949.81	3028.83	-362.74	1646992.55	14295742.89	39°22'02.997"N	80°58'36.238"W	3050.48	353.171	0.20	0.00	0.20	
9818.00	89.690	338.670	6468.63	3044.81	3117.03	-398.04	1646957.27	14295831.08	39°22'03.869"N	80°58'36.687"W	3142.34	352.723	1.01	-0.09	1.01	
9913.00	89.850	338.140	6469.01	3139.81	3205.36	-433.00	1646922.32	14295919.35	39°22'04.742"N	80°58'37.132"W	3234.48	352.307	0.58	0.17	-0.56	
10008.00	89.850	335.280	6469.26	3234.75	3292.61	-470.56	1646884.78	14296006.57	39°22'05.604"N	80°58'37.610"W	3326.07	351.857	3.01	0.00	-3.01	
10103.00	89.780	338.710	6469.56	3329.71	3380.04	-507.68	1646847.67	14296093.96	39°22'06.468"N	80°58'38.082"W	3417.96	351.458	3.61	-0.07	3.61	
10198.00	89.750	338.880	6469.95	3424.71	3468.61	-542.04	1646813.32	14296182.49	39°22'07.344"N	80°58'38.520"W	3510.71	351.118	0.18	-0.03	0.18	
10293.00	89.780	335.700	6470.34	3519.68	3556.23	-578.71	1646776.67	14296270.08	39°22'08.210"N	80°58'38.986"W	3603.01	350.757	3.35	0.03	-3.35	
10389.00	89.690	333.830	6470.79	3615.48	3643.07	-619.64	1646735.76	14296356.88	39°22'09.068"N	80°58'39.507"W	3695.39	350.347	1.95	-0.08	-1.95	
10484.00	89.820	336.750	6471.19	3710.32	3729.36	-659.35	1646696.06	14296443.14	39°22'09.921"N	80°58'40.013"W	3787.20	349.974	3.08	0.14	3.07	
10579.00	89.820	340.330	6471.49	3805.31	3817.76	-694.10	1646661.33	14296531.50	39°22'10.795"N	80°58'40.455"W	3880.34	349.696	3.77	0.00	3.77	
10674.00	89.720	342.350	6471.87	3900.18	3907.76	-724.49	1646630.95	14296621.47	39°22'11.685"N	80°58'40.841"W	3974.35	349.497	2.13	-0.11	2.13	
10769.00	89.820	342.940	6472.25	3994.92	3998.43	-752.83	1646602.62	14296712.10	39°22'12.581"N	80°58'41.202"W	4068.69	349.337	0.63	0.11	0.62	
10864.00	89.850	342.930	6472.53	4089.62	4089.25	-780.71	1646574.75	14296802.88	39°22'13.478"N	80°58'41.557"W	4163.11	349.191	0.03	0.03	-0.01	
10960.00	89.880	341.430	6472.75	4185.41	4180.64	-810.08	1646545.39	14296894.24	39°22'14.382"N	80°58'41.930"W	4258.40	349.034	1.56	0.03	-1.56	
11055.00	89.820	338.710	6473.00	4280.36	4269.94	-842.46	1646513.02	14296983.50	39°22'15.264"N	80°58'42.343"W	4352.26	348.839	2.86	-0.06	-2.86	
11150.00	89.660	334.230	6473.43	4375.28	4357.02	-880.38	1646475.12	14297070.55	39°22'16.125"N	80°58'42.825"W	4445.08	348.577	4.72	-0.17	-4.72	
11244.00	89.850	333.630	6473.83	4468.99	4441.46	-921.69	1646438.83	14297154.95	39°22'16.960"N	80°58'43.351"W	4536.08	348.276	0.67	0.20	-0.64	
11339.00	89.910	337.220	6474.03	4563.85	4527.84	-961.19	1646394.34	14297241.29	39°22'17.814"N	80°58'43.854"W	4628.73	348.015	3.78	0.06	3.78	
11434.00	90.000	338.570	6474.11	4658.84	4615.85	-996.94	1646358.61	14297329.27	39°22'18.684"N	80°58'44.308"W	4722.28	347.812	1.42	0.09	1.42	
11530.00	89.780	337.040	6474.29	4754.83	4704.73	-1033.20	1646322.36	14297418.12	39°22'19.562"N	80°58'44.770"W	4816.85	347.614	1.61	-0.23	-1.59	
11625.00	90.090	336.240	6474.40	4849.79	4791.95	-1070.87	1646284.71	14297505.30	39°22'20.424"N	80°58'45.249"W	4910.14	347.403	0.90	0.33	-0.84	
11719.00	90.150	337.350	6474.20	4843.75	4878.34	-1107.91	1646247.88	14297591.66	39°22'21.278"N	80°58'45.721"W	5002.57	347.205	1.18	0.06	1.18	



Actual Wellpath Report

Shepherd Unit 1H AWP Proj: 17661'

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REFERENCE WELLPATH IDENTIFICATION

Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #09
Area	Tyler County, WV	Well	Shepherd Unit 1H
Field	Tyler	Wellbore	Shepherd Unit 1H AWB
Facility	Ritchie Petroleum Pad		

WELLPATH DATA (214 stations)

MD (ft)	Inclination (°)	Azimuth (°)	TVD (ft)	Vert Sect (ft)	North (ft)	East (ft)	Grid East (ft)	Grid North (ft)	Latitude	Longitude	Closure Dist (ft)	Closure Dir (°)	DLS (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	Comments
11815.00	90.150	341.220	6473.95	5039.72	4988.12	-1141.86	1646213.75	14297681.40	39°22'22.166"N	80°58'46.153"W	5097.65	347.056	4.03	0.00	4.03	
11910.00	90.280	339.850	6473.60	5134.65	5057.68	-1173.52	1646182.10	14297770.93	39°22'23.051"N	80°58'46.556"W	5192.04	346.937	1.45	0.14	-1.44	
12005.00	90.030	336.740	6473.34	5229.64	5145.94	-1208.65	1646146.99	14297859.15	39°22'23.923"N	80°58'47.003"W	5285.97	346.782	3.28	-0.26	-3.27	
12101.00	90.280	336.410	6473.08	5325.59	5234.03	-1246.81	1646108.84	14297947.20	39°22'24.794"N	80°58'47.488"W	5380.48	346.601	0.43	0.26	-0.34	
12195.00	90.280	338.040	6472.62	5419.56	5320.69	-1283.20	1646072.47	14298033.83	39°22'25.651"N	80°58'47.951"W	5473.24	346.441	1.73	0.00	1.73	
12290.00	90.220	339.240	6472.21	5514.56	5409.16	-1317.80	1646037.88	14298122.27	39°22'26.525"N	80°58'48.392"W	5567.37	346.308	1.26	-0.06	-1.26	
12386.00	90.460	338.340	6471.64	5610.56	5498.66	-1352.53	1646003.16	14298211.73	39°22'27.410"N	80°58'48.834"W	5662.56	346.181	0.97	0.25	-0.94	
12480.00	90.620	336.290	6470.75	5704.53	5585.38	-1388.78	1645966.93	14298298.41	39°22'28.267"N	80°58'49.295"W	5756.45	346.037	2.19	0.17	-2.18	
12575.00	90.620	336.480	6469.72	5799.46	5672.42	-1426.83	1645928.89	14298385.42	39°22'29.127"N	80°58'49.780"W	5849.12	345.981	0.20	0.00	0.20	
12670.00	90.800	337.900	6468.54	5894.43	5759.98	-1463.66	1645892.08	14298472.94	39°22'29.993"N	80°58'50.248"W	5943.03	345.742	1.51	0.19	1.49	
12765.00	90.890	338.680	6467.14	5989.42	5848.23	-1498.79	1645856.96	14298561.16	39°22'30.865"N	80°58'50.695"W	6037.23	345.626	0.83	0.09	0.82	
12861.00	90.550	338.360	6465.94	6085.41	5937.56	-1533.94	1645821.82	14298650.45	39°22'31.748"N	80°58'51.143"W	6132.50	345.515	0.49	-0.35	-0.33	
12956.00	90.860	337.220	6464.77	6180.40	6025.50	-1569.85	1645785.93	14298738.35	39°22'32.617"N	80°58'51.600"W	6226.64	345.397	1.24	0.33	-1.20	
13052.00	90.920	337.920	6463.28	6276.38	6114.22	-1606.47	1645749.32	14298827.04	39°22'33.494"N	80°58'52.066"W	6321.75	345.279	0.73	0.08	0.73	
13147.00	91.230	342.670	6461.48	6371.28	6203.62	-1638.49	1645717.31	14298916.40	39°22'34.378"N	80°58'52.473"W	6416.35	345.205	5.01	0.33	5.00	
13242.00	90.770	339.600	6459.84	6466.15	6293.49	-1669.20	1645686.62	14299006.24	39°22'35.266"N	80°58'52.864"W	6511.09	345.146	3.27	-0.48	-3.23	
13337.00	90.680	334.540	6458.63	6561.08	6380.95	-1706.20	1645649.63	14299093.66	39°22'36.131"N	80°58'53.335"W	6605.12	345.030	5.33	-0.09	-5.33	
13432.00	90.120	334.680	6457.97	6655.87	6466.77	-1746.93	1645608.92	14299179.45	39°22'36.979"N	80°58'53.854"W	6698.57	344.883	0.61	-0.59	0.15	
13528.00	90.520	336.400	6457.43	6751.75	6554.15	-1786.68	1645569.19	14299266.79	39°22'37.843"N	80°58'54.360"W	6793.31	344.752	1.84	0.42	1.79	
13623.00	90.370	338.400	6456.69	6846.72	6641.85	-1823.18	1645532.70	14299354.46	39°22'38.710"N	80°58'54.824"W	6887.54	344.650	2.11	-0.16	2.11	
13718.00	90.520	338.820	6455.96	6941.72	6730.30	-1857.83	1645496.06	14299442.87	39°22'39.584"N	80°58'55.285"W	6982.01	344.568	0.47	0.16	0.44	
13813.00	90.550	339.140	6455.07	7036.71	6818.98	-1891.90	1645464.00	14299531.51	39°22'40.460"N	80°58'55.699"W	7076.56	344.493	0.34	0.03	0.34	
13908.00	90.370	337.860	6454.31	7131.71	6907.36	-1926.72	1645429.20	14299619.86	39°22'41.334"N	80°58'56.142"W	7171.05	344.414	1.36	-0.19	-1.35	
14004.00	90.220	341.160	6453.81	7227.67	6997.27	-1960.32	1645395.62	14299709.74	39°22'42.223"N	80°58'56.570"W	7266.68	344.350	3.44	-0.16	3.44	
14100.00	90.680	337.370	6453.06	7323.64	7087.04	-1994.30	1645361.65	14299799.47	39°22'43.110"N	80°58'57.002"W	7362.29	344.283	3.98	0.48	-3.95	
14196.00	90.000	333.310	6452.49	7419.48	7174.26	-2034.35	1645321.62	14299886.66	39°22'43.972"N	80°58'57.512"W	7457.12	344.169	4.29	-0.71	-4.23	
14291.00	89.850	333.310	6452.61	7514.11	7259.14	-2077.02	1645278.97	14299971.50	39°22'44.811"N	80°58'58.055"W	7550.44	344.033	0.16	-0.16	0.00	
14386.00	89.910	336.600	6452.81	7608.92	7345.19	-2117.23	1645238.77	14300057.52	39°22'45.662"N	80°58'58.567"W	7644.25	343.921	3.46	0.06	3.46	
14480.00	89.850	340.610	6453.01	7702.90	7432.70	-2151.51	1645204.50	14300144.99	39°22'46.527"N	80°58'59.003"W	7737.83	343.856	4.27	-0.06	4.27	
14576.00	89.910	340.250	6453.21	7798.84	7523.15	-2183.67	1645172.36	14300235.41	39°22'47.421"N	80°58'59.413"W	7833.66	343.814	0.38	0.06	-0.38	

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Actual Wellpath Report

Shepherd Unit 1H AWP Proj: 17661'

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REFERENCE WELLPATH IDENTIFICATION	
Operator	ANTERO RESOURCES CORPORATION
Area	Tyler County, WV
Field	Tyler
Facility	Ritchie Petroleum Pad
Slot #09	Shepherd Unit 1H
Well	Shepherd Unit 1H AWB
Wellbore	Shepherd Unit 1H AWB

WELLPATH DATA (214 stations)																
MD (ft)	Inclination (°)	Azimuth (°)	TVD (ft)	Vert Sect (ft)	North (ft)	East (ft)	Grid East (ft)	Grid North (ft)	Latitude	Longitude	Closure Dist (ft)	Closure Dir (°)	DLS (F/100ft)	Build Rate (F/100ft)	Turn Rate (F/100ft)	Comments
14671.00	89.820	340.160	6453.43	7893.79	7612.54	-2215.84	1645140.20	14300324.76	39°22'48.304"N	80°58'59.822"W	7928.47	343.771	0.13	-0.09	-0.09	
14767.00	89.820	339.210	6453.74	7989.77	7702.57	-2249.17	1645106.88	14300414.75	39°22'49.194"N	80°59'00.246"W	8024.23	343.722	0.99	0.00	-0.99	
14862.00	89.940	341.000	6453.93	8084.72	7791.89	-2281.49	1645074.57	14300504.04	39°22'50.077"N	80°59'00.658"W	8119.04	343.680	1.89	0.13	1.88	
14957.00	90.000	340.710	6453.98	8179.64	7881.64	-2312.65	1645043.43	14300593.75	39°22'50.964"N	80°59'01.054"W	8213.93	343.647	0.31	0.06	-0.31	
15052.00	89.910	338.560	6454.06	8274.61	7970.69	-2345.71	1645010.38	14300682.77	39°22'51.844"N	80°59'01.475"W	8308.69	343.601	2.27	-0.09	-2.26	
15147.00	89.780	338.290	6454.32	8369.61	8059.04	-2380.64	1644975.46	14300771.08	39°22'52.717"N	80°59'01.920"W	8403.31	343.543	0.32	-0.14	-0.28	
15242.00	89.970	337.380	6454.52	8464.60	8147.02	-2416.48	1644939.64	14300859.02	39°22'53.587"N	80°59'02.376"W	8497.84	343.479	0.98	0.20	-0.96	
15337.00	90.310	339.710	6454.29	8559.59	8235.43	-2451.23	1644904.90	14300947.39	39°22'54.461"N	80°59'02.818"W	8592.48	343.425	2.48	0.36	2.45	
15433.00	90.180	341.860	6453.88	8655.51	8326.07	-2482.82	1644873.32	14301038.00	39°22'55.357"N	80°59'03.221"W	8688.38	343.366	2.24	-0.14	2.24	
15528.00	90.250	340.100	6453.52	8750.41	8415.88	-2513.78	1644842.38	14301127.78	39°22'56.245"N	80°59'03.615"W	8783.29	343.369	1.85	0.07	-1.85	
15623.00	90.400	339.250	6452.99	8845.38	8504.96	-2546.78	1644809.39	14301216.82	39°22'57.125"N	80°59'04.035"W	8878.09	343.330	0.91	0.16	-0.89	
15718.00	90.250	339.740	6452.45	8940.36	8593.94	-2580.05	1644776.13	14301305.77	39°22'58.005"N	80°59'04.458"W	8972.88	343.289	0.54	-0.16	0.52	
15814.00	90.340	339.730	6451.95	9036.33	8684.00	-2613.30	1644742.89	14301395.79	39°22'58.895"N	80°59'04.881"W	9068.69	343.252	0.09	0.09	-0.01	
15908.00	90.150	337.000	6451.55	9130.32	8771.37	-2647.96	1644708.25	14301483.12	39°22'59.758"N	80°59'05.323"W	9162.35	343.202	2.91	-0.20	-2.90	
16004.00	90.220	335.530	6451.24	9226.25	8859.25	-2686.60	1644669.63	14301570.96	39°23'00.627"N	80°59'05.815"W	9257.65	343.130	1.53	0.07	-1.53	
16099.00	90.340	333.280	6450.78	9321.01	8944.92	-2727.63	1644628.61	14301658.60	39°23'01.474"N	80°59'06.337"W	9351.55	343.042	2.37	0.13	-2.37	
16194.00	90.460	334.190	6450.11	9415.70	9030.11	-2769.67	1644586.59	14301741.75	39°23'02.316"N	80°59'06.872"W	9445.31	342.948	0.97	0.13	0.96	
16289.00	90.340	338.560	6449.45	9510.61	9117.12	-2807.73	1644548.54	14301828.73	39°23'03.176"N	80°59'07.357"W	9539.67	342.863	4.60	-0.13	4.60	
16385.00	90.460	339.190	6448.78	9606.60	9206.67	-2842.33	1644513.96	14301918.24	39°23'04.061"N	80°59'07.797"W	9635.43	342.843	0.67	0.13	0.66	
16480.00	90.680	337.440	6447.83	9701.60	9294.94	-2877.43	1644478.87	14302006.48	39°23'04.933"N	80°59'08.244"W	9730.43	342.799	1.86	0.23	-1.84	
16574.00	90.770	342.730	6446.64	9795.51	9383.28	-2909.44	1644446.88	14302094.78	39°23'05.807"N	80°59'08.651"W	9823.99	342.773	5.63	0.10	5.63	
16668.00	90.770	344.430	6445.38	9889.12	9473.43	-2936.00	1644420.32	14302184.90	39°23'06.698"N	80°59'09.990"W	9917.96	342.781	1.81	0.00	1.81	
16762.00	90.680	340.190	6444.19	9982.87	9562.96	-2964.56	1644391.78	14302274.39	39°23'07.583"N	80°59'09.353"W	10011.93	342.776	4.51	-0.10	-4.51	
16858.00	90.770	337.660	6442.98	10078.85	9652.52	-2999.07	1644357.28	14302363.92	39°23'08.468"N	80°59'09.793"W	10107.70	342.740	2.64	0.09	-2.64	
16953.00	90.740	338.020	6441.72	10173.84	9740.50	-3034.90	1644321.46	14302451.86	39°23'09.337"N	80°59'10.249"W	10202.35	342.694	0.38	-0.03	0.38	
17048.00	90.520	337.220	6440.68	10268.83	9828.34	-3071.07	1644285.31	14302539.66	39°23'10.206"N	80°59'10.709"W	10296.97	342.647	0.87	-0.23	-0.84	
17143.00	90.680	338.980	6439.68	10363.82	9916.47	-3106.50	1644249.89	14302627.76	39°23'11.077"N	80°59'11.160"W	10391.67	342.606	1.86	0.17	1.85	
17239.00	90.680	339.760	6438.54	10459.78	10006.31	-3140.32	1644216.09	14302717.56	39°23'11.965"N	80°59'11.591"W	10487.51	342.576	0.81	0.00	0.81	
17334.00	90.680	338.650	6437.42	10554.78	10095.11	-3174.05	1644182.37	14302806.33	39°23'12.842"N	80°59'12.020"W	10582.34	342.546	1.17	0.00	-1.17	
17429.00	90.770	339.050	6436.21	10649.77	10183.71	-3208.32	1644148.11	14302894.89	39°23'13.718"N	80°59'12.457"W	10677.13	342.513	0.43	0.09	0.42	

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Actual Wellpath Report

Shepherd Unit 1H AWP Proj: 17661'
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REFERENCE WELLPATH IDENTIFICATION	
Operator	ANTERO RESOURCES CORPORATION
Area	Tyler County, WV
Field	Tyler
Facility	Ritchie Petroleum Pad
Slot #09	Shepherd Unit 1H
Well	Shepherd Unit 1H AWB
Wellbore	Shepherd Unit 1H AWB

WELLPATH DATA (214 stations)																
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert.Sect [ft]	North [ft]	East [ft]	Grid East [ft]	Grid North [ft]	Latitude	Longitude	Closure Dist [ft]	Closure Dir [°]	DLS [F/100ft]	Build Rate [F/100ft]	Turn Rate [F/100ft]	Comments
17524.00	90.710	340.030	6434.991	10744.74	10272.70	-3241.53	1644114.92	14302993.85	39°23'14.598"N	80°59'12.879"W	10772.00	342.487	1.03	-0.06	1.03	
17619.00	90.650	337.230	6433.86	10839.72	10361.16	-3276.14	1644080.33	14303072.27	39°23'15.472"N	80°59'13.320"W	10866.77	342.453	2.95	-0.06	-2.95	
17637.00	90.620	336.280	6433.66	10857.71	10377.70	-3283.24	1644073.22	14303088.80	39°23'15.636"N	80°59'13.410"W	10884.68	342.444	5.28	-0.17	-5.28	
17661.00	90.620	336.280	6433.40	10881.70	10399.67	-3292.90	1644063.57	14303110.76	39°23'15.853"N	80°59'13.533"W	10908.54	342.430	0.00	0.00	0.00	Projected MD at TD: 17611'

HOLE & CASING SECTIONS - Ref Wellbore: Shepherd Unit 1H AWB Ref Wellpath: Shepherd Unit 1H AWP Proj: 17661'												
String/Diameter	Start MD [ft]	End MD [ft]	Interval [ft]	Start TVD [ft]	End TVD [ft]	Start N/S [ft]	Start E/W [ft]	End N/S [ft]	End E/W [ft]	Start Rate [ft]	End Rate [ft]	Comments
20in Conductor	32.00	112.00	80.00	32.00	112.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08
17.5in Open Hole	112.00	414.00	302.00	112.00	414.00	0.03	0.08	0.03	0.43	0.08	0.43	1.25
13.375in Casing Surface	32.00	414.00	382.00	32.00	414.00	0.00	0.00	0.00	0.43	0.00	0.43	1.25
12.25in Open Hole	414.00	2495.60	2081.60	414.00	2471.03	0.43	1.25	-74.80	-74.80	1.25	-74.80	257.01
9.625in Casing Intermediate	32.00	2495.60	2463.60	32.00	2471.03	0.00	0.00	0.00	-74.80	0.00	-74.80	257.01
8.75in Open Hole	2495.60	6481.00	3985.40	2471.03	6296.62	-74.80	257.01	52.18	830.98	257.01	52.18	830.98
8.5in Open Hole	6481.00	17661.00	11180.00	6296.62	6433.40	52.18	830.98	10399.67	-3292.90	830.98	10399.67	-3292.90
5.5in Casing Production	32.00	17661.00	17629.00	32.00	6433.40	0.00	0.00	10399.67	-3292.90	0.00	10399.67	-3292.90



Actual Wellpath Report

Shepherd Unit 1H AWP Proj: 17661'

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REFERENCE WELLPATH IDENTIFICATION

Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #09
Area	Tyler County, WV	Well	Shepherd Unit 1H
Field	Tyler	Wellbore	Shepherd Unit 1H AWB
Facility	Ritchie Petroleum Pad		

TARGETS

Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
Shepherd Unit 1H POE - Rev-2	6408.00	253.71	752.88	1648107.73	14292968.88	39°21'35.565"N	80°58'22.044"W	point
Shepherd Unit 1H LP - Rev-2	6440.00	458.47	646.79	1646001.68	14293173.56	39°21'37.589"N	80°58'23.394"W	point
Shepherd Unit 1H BHL - Rev-2	6496.08	10413.23	-3304.08	1644052.39	14303124.32	39°23'15.987"N	80°59'13.676"W	point

WELLPATH COMPOSITION - Ref Wellbore: Shepherd Unit 1H AWB

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
32.00	397.00	Gyrodata standard - Single-shot	01 Gyrodata SS Gyro <17-1/2">(100-380)	Shepherd Unit 1H AWB
397.00	523.00	Gyrodata standard - Single-shot	02 Gyrodata SS Gyro <12-1/4">(380)(417-506)	Shepherd Unit 1H AWB
523.00	2440.00	ISCWSA MWD, Rev. 4 (Standard)	03 Directional ONE MWD <12-1/4">(506)(562-2423)	Shepherd Unit 1H AWB
2440.00	6395.00	ISCWSA MWD, Rev. 4 (Standard)	04 Directional ONE MWD <8-3/4">(2423)(2488-6378)	Shepherd Unit 1H AWB
6395.00	17637.00	BHI AutoTrak Curve (Short)	05 BHI AT Curve <8-1/2">(6395)(6454-17637)	Shepherd Unit 1H AWB
17637.00	17661.00	Blind Drilling (std)	Projection to bit	Shepherd Unit 1H AWB

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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #09
Area	Tyler County, WV	Well	Shepherd Unit 1H
Field	Tyler	Wellbore	Shepherd Unit 1H AWB
Facility	Ritchie Petroleum Pad		

COMMENTS

Wellpath general comments
 API: 47-095-02385-0000
 BHI Job #: 8736598
 Rig: Frontier 32
 Duration: 08/30/2017-09/03/2017
 Gyrodata SS Gyro <17-1/2"> (100'-380')
 Gyrodata SS Gyro <12-1/4"> (380')(417'-506')
 Directional ONE MWD <12-1/4"> (506')(562'-2423')
 Directional ONE MWD <8-3/4"> (2423')(2488'-6378')
 BHI AT Curve <8-1/2"> (6395')(6454'-17637')
 Middlesex: 6484' MD
 Burkett: 6689' MD
 Tully: 6762' MD
 Marcellus POE: 6793' MD
 Projected MD at TD: 17661'

Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	4/12/2018
Job End Date:	4/30/2018
State:	West Virginia
County:	Tyler
API Number:	47-095-02385-00-00
Operator Name:	Antero Resources Corporation
Well Name and Number:	Shepherd 1H
Latitude:	39.46633000
Longitude:	-80.85286400
Datum:	NAD27
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	6,474
Total Base Water Volume (gal):	22,340,564
Total Base Non Water Volume:	0



Hydraulic Fracturing Fluid Composition:

Trade Name	Supplier	Purpose	Ingredients	Chemical Abstract Service Number (CAS #)	Maximum Ingredient Concentration in Additive (% by mass)**	Maximum Ingredient Concentration in HF Fluid (% by mass)**	Comments
Fresh Water	Operator	Base Fluid					
			Water	7732-18-5	100.00000	89.24799	Density = 8.330
Ingredients	Listed Above	Listed Above					
			Water	7732-18-5	100.00000	0.20226	

HAI-OS ACID INHIBITOR	Halliburton	Corrosion Inhibitor												
MC B-8614	Halliburton	Biocide					Listed Below							
SAND-PREMIUM WHITE-30/50	Halliburton	Proppant					Listed Below							
LD-2900	Multi-Chem	Friction Reducer					Listed Below							
SAND-COMMON WHITE - 100 MESH	Halliburton	Proppant					Listed Below							
SAND-PREMIUM WHITE-40/70	Halliburton	Proppant					Listed Below							
WG-36 GELLING AGENT	Halliburton	Gelling Agent					Listed Below							
HYDROCHLORIC ACID	Halliburton	Solvent					Listed Below							

SCALECHEK LP-70	Halliburton	Scale Inhibitor								
					Listed Below					
SP BREAKER	Halliburton	Breaker								
					Listed Below					
Items above are Trade Names with the exception of Base Water. Items below are the individual ingredients.										
			Crystalline silica, quartz	14808-60-7	100.00000	10.57051				
			Hydrochloric acid	7647-01-0	15.00000	0.02294				
			Acrylamide, sodium acrylate polymer	25987-30-8	30.00000	0.01249				
			Hydrotreated light petroleum distillate	64742-47-8	30.00000	0.01249				
			Ethylene glycol	107-21-1	60.00000	0.00853				
			Sodium persulfate	7775-27-1	100.00000	0.00301				
			Glutaraldehyde	111-30-8	30.00000	0.00265				
			Guar gum	9000-30-0	100.00000	0.00244				
			Sorbitan, mono-9-octadecenoate, (Z)	1338-43-8	5.00000	0.00208				
			Poly(oxy-1,2-ethanediyl), .alpha.-tridecyl-.omega.-hydroxy-, branched	69011-36-5	5.00000	0.00208				
			Neutralized Polyacrylic Emulsion	Proprietary	10.00000	0.00142				
			Telomer	Proprietary	10.00000	0.00142				
			Quaternary ammonium compounds, benzyl-C12-16-alkyldimethyl chlorides	68424-85-1	5.00000	0.00044				
			Sodium polyacrylate	9003-04-7	1.00000	0.00014				
			Ethanol	64-17-5	1.00000	0.00009				
			Methanol	67-56-1	60.00000	0.00008				

			68527-49-1	30.00000	0.00003	
		Reaction product of acetophenone, formaldehyde, thiourea and oleic acid in dimethyl formamide				
		Fatty acids, tall oil	Proprietary	30.00000	0.00003	
		Ethoxylated alcohols	Proprietary	30.00000	0.00003	Denise Tuck, Halliburton, 3000 N. Sam Houston Pkwy E., Houston, TX 77032, 281-871-6226
		Olefins	Proprietary	5.00000	0.00001	
		Propargyl alcohol	107-19-7	10.00000	0.00001	
		Phosphoric acid	7664-38-2	0.10000	0.00001	
		Sodium sulfate	7757-82-6	0.10000	0.00000	
		Acrylic acid	79-10-7	0.01000	0.00000	

* Total Water Volume sources may include various types of water including fresh water, produced water, and recycled water

** Information is based on the maximum potential for concentration and thus the total may be over 100%

*** If you are calculating a percentage of total ingredients do not add the water volume below the green line to the water volume above the green line

Note: For Field Development Products (products that begin with FDP), MSDS level only information has been provided.
Ingredient information for chemicals subject to 29 CFR 1910.1200(f) and Appendix D are obtained from suppliers Material Safety Data Sheets (MSDS)

LATITUDE 39°22'30"

4,841'

8,129' TO BOTTOM HOLE
LATITUDE 39°25'00"

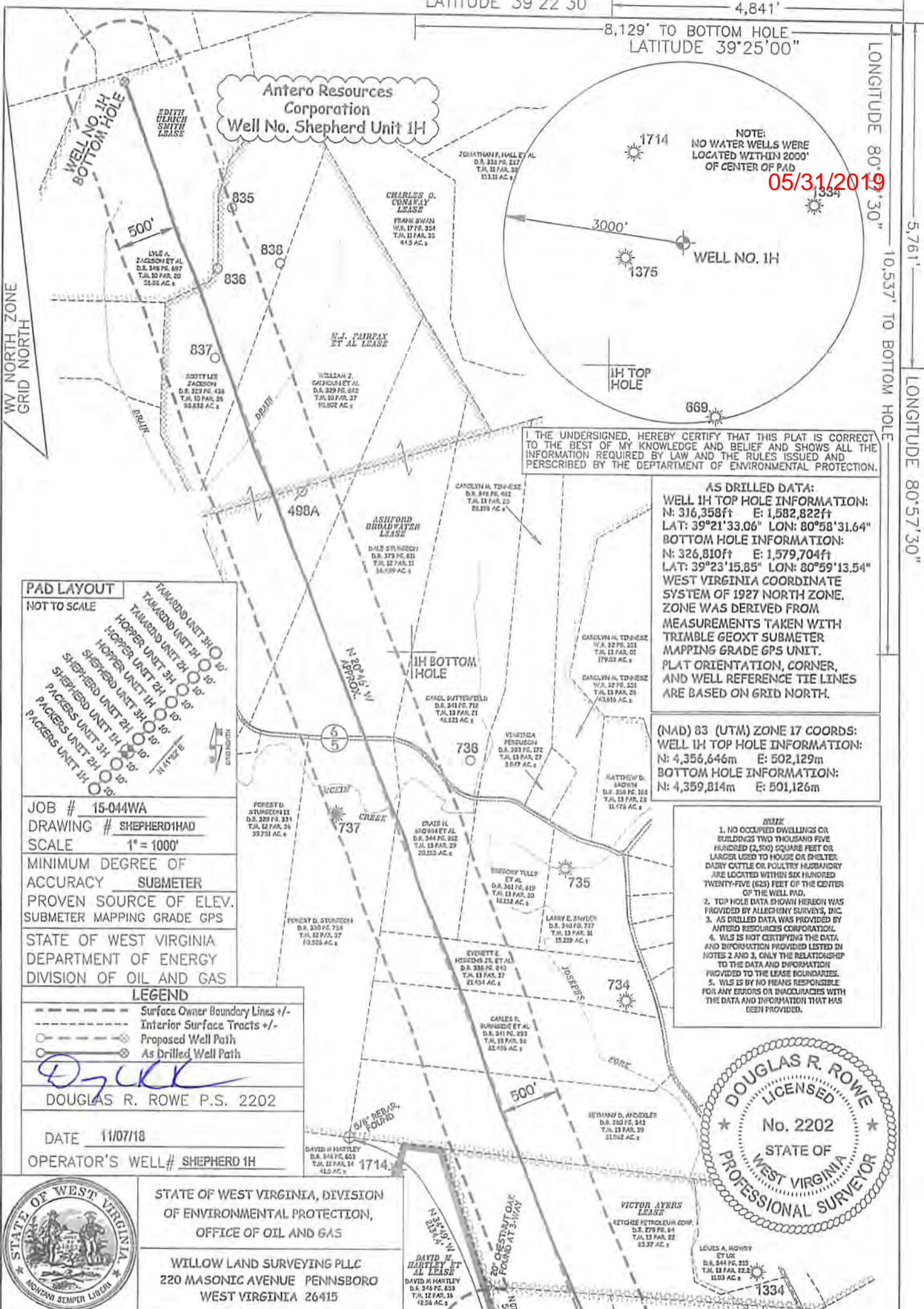
LONGITUDE 80°31'30"

5,761'

LONGITUDE 80°57'30"

Antero Resources Corporation
Well No. Shepherd Unit 1H

05/31/2019



I, THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAT IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND SHOWS ALL THE INFORMATION REQUIRED BY LAW AND THE RULES ISSUED AND PRESCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.

AS DRILLED DATA:
WELL 1H TOP HOLE INFORMATION:
 N: 316,358ft E: 1,582,822ft
 LAT: 39°21'33.06" LON: 80°58'31.64"
BOTTOM HOLE INFORMATION:
 N: 326,810ft E: 1,579,704ft
 LAT: 39°23'15.85" LON: 80°59'13.54"
 WEST VIRGINIA COORDINATE SYSTEM OF 1927 NORTH ZONE. ZONE WAS DERIVED FROM MEASUREMENTS TAKEN WITH TRIMBLE GEOXT SUBMETER MAPPING GRADE GPS UNIT. PLAT ORIENTATION, CORNER, AND WELL REFERENCE THE LINES ARE BASED ON GRID NORTH.

(NAD) 83 (UTM) ZONE 17 COORDS:
WELL 1H TOP HOLE INFORMATION:
 N: 4,356,646m E: 502,129m
BOTTOM HOLE INFORMATION:
 N: 4,359,814m E: 501,126m

NOTE
 1. NO OCCUPIED DWELLINGS OR BUILDINGS TWO THOUSAND FIVE HUNDRED (2,500) SQUARE FEET OR LARGER USED TO HOUSE OR SHELTER DAIRY CATTLE OR POULTRY HUSBANDRY ARE LOCATED WITHIN SIX HUNDRED TWENTY-FIVE (625) FEET OF THE CENTER OF THE WELL PAD.
 2. TOP HOLE DATA SHOWN HEREON WAS PROVIDED BY ALLEGHENY SURVEYS, INC.
 3. AS DRILLED DATA WAS PROVIDED BY ANTERO RESOURCES CORPORATION.
 4. WLS IS NOT CERTIFYING THE DATA AND INFORMATION PROVIDED LISTED IN NOTES 2 AND 3. ONLY THE RELATIONSHIP TO THE DATA AND INFORMATION PROVIDED TO THE LEASE BOUNDARIES.
 5. WLS IS BY NO MEANS RESPONSIBLE FOR ANY ERRORS OR INACCURACIES WITH THE DATA AND INFORMATION THAT HAS BEEN PROVIDED.



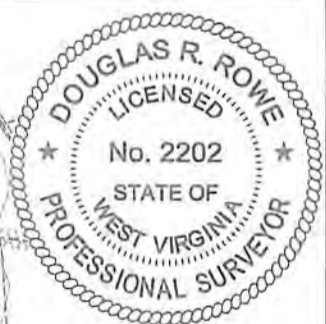
JOB # 15-044WA
 DRAWING # SHEPHERD1HAD
 SCALE 1" = 1000'
 MINIMUM DEGREE OF ACCURACY SUBMETER
 PROVEN SOURCE OF ELEV. SUBMETER MAPPING GRADE GPS
 STATE OF WEST VIRGINIA
 DEPARTMENT OF ENERGY
 DIVISION OF OIL AND GAS

LEGEND
 - - - - - Surface Owner Boundary Lines +/-
 - - - - - Interior Surface Tracts +/-
 - - - - - Proposed Well Path
 - - - - - As Drilled Well Path

D. Rowe
 DOUGLAS R. ROWE P.S. 2202
 DATE 11/07/18
 OPERATOR'S WELL# SHEPHERD 1H



STATE OF WEST VIRGINIA, DIVISION OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
 WILLOW LAND SURVEYING PLLC
 220 MASONIC AVENUE PENNSBORO WEST VIRGINIA 26415



WELL TYPE: OIL GAS LIQUID INJECTION WASTE DISPOSAL
 (IF "GAS") PRODUCTION STORAGE DEEP SHALLOW

LOCATION: ELEVATION 1,178 AS BUILT WATERSHED OUTLET MIDDLE ISLAND CREEK
 QUADRANGLE PENNSBORO 7.5 SHL MIDDLEBOURNE 7.5 BHL DISTRICT MEADE COUNTY TYLER

SURFACE OWNER DAVID M. HARTLEY ACREAGE 42.56 ACRES +/-
 OIL & GAS ROYALTY OWNER DAVID M. HARTLEY ET AL; TERRY L. SNIDER; VICTOR AYERS;
 ASHFORD BROADWATER; M.J. FAIRFAX ET AL; EDITH ULRICH SMITH

PROPOSED WORK: DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE
 PLUG OFF OLD FORMATION PERFORATE NEW FORMATION OTHER PHYSICAL CHANGE IN WELL
 (SPECIFY) AS DRILLED PLUG & ABANDON CLEAN OUT & REPLUG
 TARGET FORMATION MARCELLUS ESTIMATED DEPTH 6,433' TVD 17,661' MD

WELL OPERATOR ANTERO RESOURCES CORPORATION DESIGNATED AGENT DIANNA STAMPER - CT CORPORATION SYSTEM
 ADDRESS 1615 WYNKOOP STREET ADDRESS 5400 D BIG TYLER ROAD
 FORM WW-6 DENVER, CO 80202 CHARLESTON, WV 25313

API WELL # 47 - 095 - 02385
 STATE COUNTY PERMIT LEASE ACREAGE 42.56 AC±; 221.24 AC±; 97 AC±; 583.712 AC±; 120 AC±; 56.88 AC±

COUNTY NAME PERMIT

LATITUDE 39°22'30"

4,841'

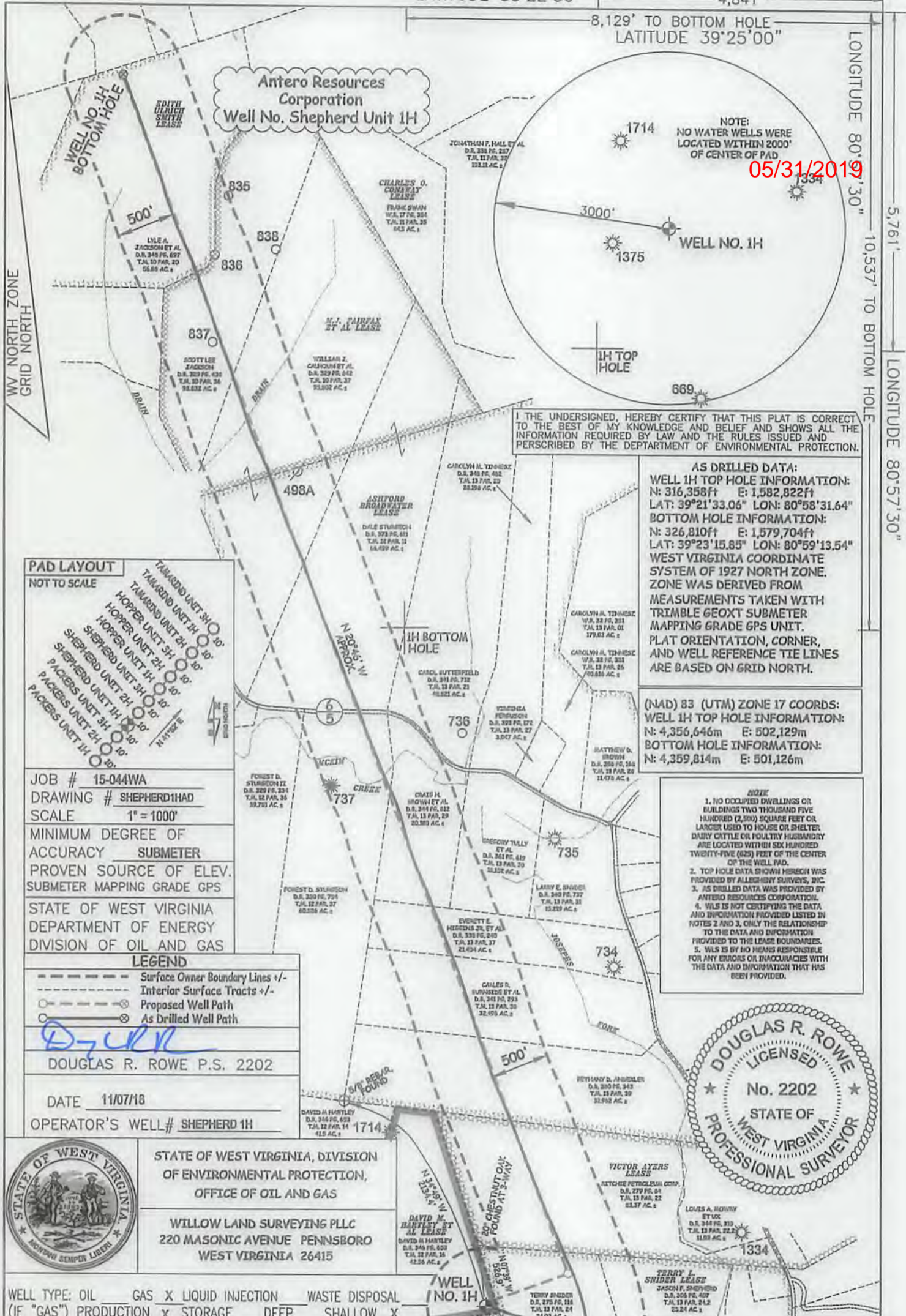
8,129' TO BOTTOM HOLE
LATITUDE 39°25'00"

LONGITUDE 80°57'30"

5,761'
LONGITUDE 80°57'30"

Antero Resources Corporation Well No. Shepherd Unit 1H

05/31/2019

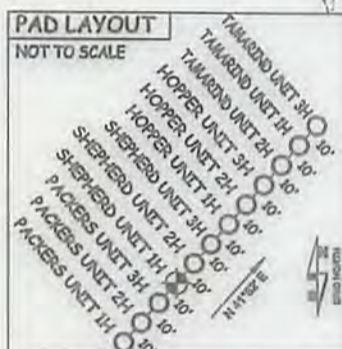


I, THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAT IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND SHOWS ALL THE INFORMATION REQUIRED BY LAW AND THE RULES ISSUED AND PERSCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.

AS DRILLED DATA:
WELL 1H TOP HOLE INFORMATION:
 N: 316,358ft E: 1,582,822ft
 LAT: 39°21'33.06" LON: 80°58'31.64"
BOTTOM HOLE INFORMATION:
 N: 326,810ft E: 1,579,704ft
 LAT: 39°23'15.85" LON: 80°59'13.54"
WEST VIRGINIA COORDINATE SYSTEM OF 1927 NORTH ZONE. ZONE WAS DERIVED FROM MEASUREMENTS TAKEN WITH TRIMBLE GEOXT SUBMETER MAPPING GRADE GPS UNIT. PLAT ORIENTATION, CORNER, AND WELL REFERENCE TIE LINES ARE BASED ON GRID NORTH.

(NAD 83 (UTM) ZONE 17 COORDS:
WELL 1H TOP HOLE INFORMATION:
 N: 4,356,646m E: 502,129m
BOTTOM HOLE INFORMATION:
 N: 4,359,814m E: 501,126m

- NOTE**
1. NO OCCUPIED DWELLINGS OR BUILDINGS TWO THOUSAND FIVE HUNDRED (2,500) SQUARE FEET OR LARGER USED TO HOUSE OR SHELTER DAIRY CATTLE OR POULTRY HUSBANDRY ARE LOCATED WITHIN SIX HUNDRED TWENTY-FIVE (625) FEET OF THE CENTER OF THE WELL PAD.
 2. TOP HOLE DATA SHOWN HEREIN WAS PROVIDED BY ALLEGHENY SURVEYS, INC.
 3. AS DRILLED DATA WAS PROVIDED BY ANTERO RESOURCES CORPORATION.
 4. WLS IS NOT CERTIFYING THE DATA AND INFORMATION PROVIDED LISTED IN NOTES 2 AND 3, ONLY THE RELATIONSHIP TO THE DATA AND INFORMATION PROVIDED TO THE LEASE BOUNDARIES.
 5. WLS IS BY NO MEANS RESPONSIBLE FOR ANY ERRORS OR INACCURACIES WITH THE DATA AND INFORMATION THAT HAS BEEN PROVIDED.



JOB # 15-044WA
 DRAWING # SHEPHERD1HAD
 SCALE 1" = 1000'
 MINIMUM DEGREE OF ACCURACY SUBMETER
 PROVEN SOURCE OF ELEV. SUBMETER MAPPING GRADE GPS
 STATE OF WEST VIRGINIA
 DEPARTMENT OF ENERGY
 DIVISION OF OIL AND GAS

LEGEND

- Surface Owner Boundary Lines +/-
- - - Interior Surface Tracts +/-
- Proposed Well Path
- As Drilled Well Path

DOUGLAS R. ROWE P.S. 2202
 DATE 11/07/18
 OPERATOR'S WELL# SHEPHERD 1H



STATE OF WEST VIRGINIA, DIVISION OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
 WILLOW LAND SURVEYING PLLC
 220 MASONIC AVENUE PENNSBORO WEST VIRGINIA 26415

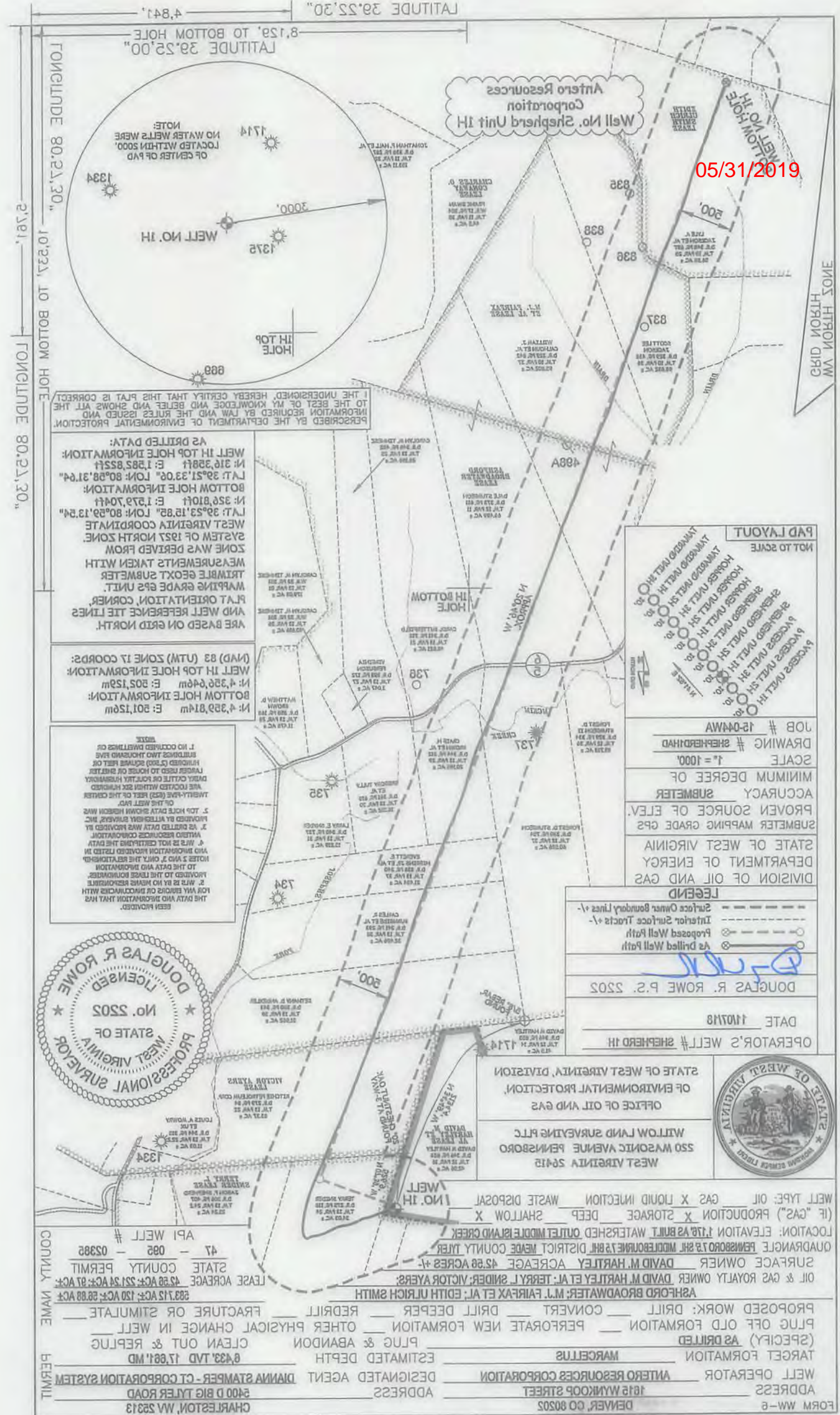
WELL TYPE: OIL GAS LIQUID INJECTION WASTE DISPOSAL
 (IF "GAS") PRODUCTION STORAGE DEEP SHALLOW
 LOCATION: ELEVATION 1,176' AS BUILT WATERSHED OUTLET MIDDLE ISLAND CREEK
 QUADRANGLE PENNSBORO 7.5 SHL MIDDLEBOURNE 7.5 BHL DISTRICT MEADE COUNTY TYLER
 SURFACE OWNER DAVID M. HARTLEY ACREAGE 42.56 ACRES +/-
 OIL & GAS ROYALTY OWNER DAVID M. HARTLEY ET AL; TERRY L. SNIDER; VICTOR AYERS;
 ASHFORD BROADWATER; M.J. FAIRFAX ET AL; EDITH ULRICH SMITH

WELL NO. 1H
 API WELL # 47 - 095 - 02385
 STATE COUNTY PERMIT LEASE ACREAGE 42.56 AC +/- 221.24 AC +/- 97 AC +/-
 583.712 AC +/- 120 AC +/- 56.83 AC +/-

PROPOSED WORK: DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE
 PLUG OFF OLD FORMATION PERFORATE NEW FORMATION OTHER PHYSICAL CHANGE IN WELL
 (SPECIFY) AS DRILLED PLUG & ABANDON CLEAN OUT & REPLUG
 TARGET FORMATION MARCELLUS ESTIMATED DEPTH 6,433' TVD 17,661' MD
 WELL OPERATOR ANTERO RESOURCES CORPORATION DESIGNATED AGENT DIANNA STAMPER - CT CORPORATION SYSTEM
 ADDRESS 1615 WYNKOOP STREET ADDRESS 5400 D BIG TYLER ROAD
 DENVER, CO 80202 CHARLESTON, WV 25313

COUNTY NAME PERMIT

05/31/2019



LONGITUDE 80.21,30" TO BOTTOM HOLE

LONGITUDE 80.21,30" TO BOTTOM HOLE

LATITUDE 39.25,00" TO BOTTOM HOLE

LATITUDE 39.25,30"

NOTE:
NO WATER WELLS WERE
LOCATED WITHIN 2000'
OF CENTER OF PAD

THE UNDERSIGNED HEREBY CERTIFY THAT THIS PLAN IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND SHOWS ALL THE INFORMATION REQUIRED BY LAW AND THE RULES ISSUED AND PERSCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION

AS DRILLED DATA:
WELL IN TOP HOLE INFORMATION:
N: 316 388ft E: 1 585 832ft
LAT: 39° 21' 23.08" LON: 80° 28' 31.64"
BOTTOM HOLE INFORMATION:
N: 326 810ft E: 1 579 704ft
LAT: 39° 21' 15.85" LON: 80° 29' 13.54"
WEST VIRGINIA COORDINATE
SYSTEM OF 1927 NORTH ZONE
ZONE WAS DERIVED FROM
MEASUREMENTS TAKEN WITH
TRIANGLE GEODT SUBSTATION
MAPPING GRADE 62 UNIT.
PLAN ORIENTATION, CORNER
AND WELL REFERENCE LINES
ARE BASED ON GRID NORTH.

(MAD) 83 (TUM) ZONE 12 COORDS:
WELL IN TOP HOLE INFORMATION:
N: 4 356 646m E: 502 129m
BOTTOM HOLE INFORMATION:
N: 4 359 814m E: 501 156m

- NOTES**
1. NO OCCUPIED DWELLINGS OR BUILDINGS TWO THOUSAND FEET OR HIGHER (E 200) SURROUND THE WELL. THESE ARE LOCATED ON THE CENTER DATA COLLECTED FOR OTHER PURPOSES AND LOCATED WITHIN SIX HUNDRED TWENTY-FIVE (625) FEET OF THE CENTER OF THE WELL PAD.
 2. AS DRILLED DATA WAS PROVIDED BY WILSON SURVEYING, INC. THIS DATA WAS PROVIDED BY WILSON SURVEYING, INC. AND BROUGHT TO ME BY THE CONTRACTOR. THIS DATA IS ONLY THE BEST AVAILABLE TO THE DATA AND INFORMATION PROVIDED TO THE LEASE BOUNDARY. I AM NOT RESPONSIBLE FOR ANY ERRORS OR OMISSIONS WHICH MAY BE IN THE DATA AND INFORMATION THAT HAS BEEN PROVIDED.
 3. TOP HOLE DATA SHOWN HEREON WAS PROVIDED BY WILSON SURVEYING, INC. THIS DATA WAS PROVIDED BY WILSON SURVEYING, INC. AND BROUGHT TO ME BY THE CONTRACTOR. THIS DATA IS ONLY THE BEST AVAILABLE TO THE DATA AND INFORMATION PROVIDED TO THE LEASE BOUNDARY. I AM NOT RESPONSIBLE FOR ANY ERRORS OR OMISSIONS WHICH MAY BE IN THE DATA AND INFORMATION THAT HAS BEEN PROVIDED.



STATE OF WEST VIRGINIA, DIVISION OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS, 520 WASHINGTON AVENUE PENNSBORO WEST VIRGINIA 26415



OPERATOR'S WELL # SHEPHERD 1H
DATE 11/07/18
DOUGLAS R. ROWE P.S. 2202
SCALE 1" = 1000'
DRAWING # SHEPHERD1H
JOB # 15-044WA

LEGEND
--- Surface Owner Boundary Lines +/-
--- Interior Surface Tracts +/-
--- Proposed Well Path
--- As Drilled Well Path
PROVEN SOURCE OF ELEV. SUBMETER
MINIMUM DEGREE OF ACCURACY SUBMETER
SCALE 1" = 1000'
DRAWING # SHEPHERD1H
JOB # 15-044WA
NOT TO SCALE
PAD LAYOUT

FORM W-8
WELL OPERATOR ANTERO RESOURCES CORPORATION
ADDRESS 1615 WYUNKOP STREET DENVER, CO 80205
DESIGNATED AGENT DIANNA STAMPER - CT CORPORATION SYSTEM
TARGET FORMATION MARCELLUS
WELL OPERATOR ANTERO RESOURCES CORPORATION
ADDRESS 1615 WYUNKOP STREET DENVER, CO 80205
DESIGNATED AGENT DIANNA STAMPER - CT CORPORATION SYSTEM
TARGET FORMATION MARCELLUS
PROPOSED WORK: DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE
OIL & GAS ROYALTY OWNER DAVID M. HARLEY ET AL; TERRYL SNIDER; VICTOR BYERS; DAVID M. HARLEY ACREAGE 45.88 ACRES +/-
SURFACE OWNER DAVID M. HARLEY ACREAGE 45.88 ACRES +/-
LOCATION: ELEVATION 1,170 AS BUILT, WATERSHED OUTLET MIDDLE RIVER AND CREEK
(IF "GAS") PRODUCTION X STORAGE DEEP SHALLOW X
WELL TYPE: OIL GAS X LIQUID INJECTION WASTE DISPOSAL
5400 D BIG TYLER ROAD CHARLESTON, WV 25313
PERMIT # 0433, TVD 17861, MD
CLEAN OUT & REPLUG
PLUG & ABANDON
ESTIMATED DEPTH
STATE COUNTY PERMIT LEASE ACREAGE 45.88 AC +/- 521.24 AC +/- 97 AC +/-
APL WELL # 082 - 05395
COUNTY 47 - 082 - 05395